

EXECUTIVE SUMMARY

ES.1 BACKGROUND TO THE PEIS

In August 2005, the U.S. Congress enacted the Energy Policy Act of 2005, Public Law (P.L.) 109-58. In Section 369 of this Act, titled the “Oil Shale, Tar Sands, and Other Strategic Unconventional Fuels Act of 2005,” Congress declared that oil shale and tar sands (and other unconventional fuels) are strategically important domestic energy resources that should be developed to reduce the nation’s growing dependence on oil from politically and economically unstable foreign sources. To support this policy, Congress directed the Secretary of the Interior (the Secretary) to undertake a series of steps to establish a commercial leasing program for oil shale and tar sands. A principle provision mandated the Secretary to “...Complete a programmatic environmental impact statement for 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.”

In furtherance of this direction, the U.S. Bureau of Land Management (BLM) is amending 12 land use plans in the 3 states to describe the most geologically prospective areas administered by the BLM in these states where oil shale and tar sands resources are present, and to identify which portions of those areas will be open for application for commercial leasing, exploration, and development. Both the Draft Programmatic Environmental Impact Statement (PEIS) and this Final PEIS contain analyses of the direct, indirect, and cumulative environmental, cultural, and socioeconomic impacts of the proposed action and alternatives. Preparation of this PEIS complies with the requirements of the Federal Land Policy and Management Act; the National Environmental Policy Act of 1969 (NEPA); the President’s Council on Environmental Quality’s (CEQ’s) NEPA implementing regulations; the BLM’s land use planning regulations contained in Part 1600 of Title 43 of the *Code of Federal Regulations* (43 CFR Part 1600); the BLM’s *Land Use Planning Handbook* (H-1601-1) (BLM 2005); and the BLM’s *NEPA Handbook* (H-1790-1) (BLM 2008).

ES.2 DESCRIPTION OF THE PLANNING AREA

The study area for the oil shale resources includes the most geologically prospective area of the Green River Formation located in the Piceance, Uinta, Green River, and Washakie Basins. The BLM identified the most geologically prospective areas for oil shale development on the basis of the grade and thickness of the deposits within the Green River Formation. There are approximately 2.3 million acres of BLM-managed lands within this area that are the subject of this PEIS. For the tar sands resources, the study area, which coincides with the area considered to be the most geologically prospective for tar sands development, includes those locations in Utah previously designated as Special Tar Sand Areas (STSAs) in the geologic reports (minutes) prepared by the U.S. Geological Survey in 1980 (USGS 1980a–k) and formalized by Congress in the Combined Hydrocarbon Leasing Act of 1981 (P.L. 97-78). The STSAs contain approximately 656,000 acres of BLM-managed lands. The PEIS study areas for both oil shale and tar sands include public lands administered by the BLM where the federal government owns

both the surface estate and subsurface mineral rights and where the federal government owns the subsurface mineral rights but the surface estate is owned by Tribes, states, or private parties (i.e., split estate lands).

ES.3 SCOPING PROCESS

The BLM published the Notice of Intent (NOI) to prepare the *Oil Shale and Tar Sands Resources Leasing PEIS* in the *Federal Register* (70 FR 73791–73792) on December 13, 2005 (the name was subsequently changed to the *Oil Shale and Tar Sands Resource Management Plan Amendments to Address Land Use Allocations in Colorado, Utah, and Wyoming and Programmatic Environmental Impact Statement*). The NOI identified planning criteria, initiated the public scoping process, and invited interested members of the public to provide comments on the scope and objectives of the PEIS and to identify issues to be addressed in the planning process. The BLM conducted scoping from December 13, 2005, through January 31, 2006. During that period, the BLM invited the public and interested groups to provide information on resource use, land allocations, and development and protection opportunities for consideration in preparation of the PEIS. Comments were received in the broad categories of environmental concerns, socioeconomics, resource and technology concerns, stakeholder involvement, alternatives, land use planning, cumulative impacts, mitigation and reclamation, and BLM policy. It is estimated that approximately 5,000 people participated in the scoping process by attending public meetings, providing comments, requesting information, or visiting the project Web site.

The BLM published a scoping report (BLM 2006) that summarizes and categorizes the major themes, issues, concerns, and comments expressed by private citizens, government agencies, private firms, and nongovernmental organizations. These comments were considered in developing the alternatives in this PEIS, and the significant issues identified were analyzed. Copies of the scoping report, individual letters, electronic comments, and other written comments received during scoping are available on the Oil Shale and Tar Sands Programmatic EIS Web site (<http://ostseis.anl.gov>).

ES.4 PUBLIC REVIEW OF THE DRAFT PEIS

The Notice of Availability (NOA) of the Draft PEIS was published on December 21, 2007 (72 FR 72751–72753), beginning a 90-day comment period which ended on March 20, 2008. The comment period was reopened on March 21, 2008, and closed the second time on April 21, 2008 (73 FR 17375–17376). During both times, the BLM invited the public to provide substantive comments on the content of the Draft PEIS.

In February 2008, the BLM held a series of 12 informal, open-house style public meetings to allow the public to talk with BLM officials about the content of the PEIS. Open houses were held in Salt Lake City, Price, and Vernal, Utah; Rock Springs and Cheyenne, Wyoming; and, Rifle, Meeker, and Denver, Colorado.

The Draft PEIS was posted on the official Oil Shale and Tar Sands Programmatic EIS Web site at <http://ostseis.anl.gov>. Printed copies of the document and compact disks (CDs) containing electronic files of the document were mailed upon request. More than 102,000 people and organizations participated in the comment process by providing comments to the Web site or via surface mail. The comments were all posted on the project Web site. The BLM reviewed and responded to all comments and made changes to the PEIS, as appropriate.

Most of the cooperating agencies provided written comments on the Draft PEIS. Their comments, along with BLM's responses, are included in Chapter 7 of the PEIS. Both the comments of the cooperating agencies and those of the public can be found on the project Web site and in Volume 4 of the Final PEIS. Volume 4 is not printed but is provided on a CD that is included in a pocket on the back cover of printed Volume 3. A complete set of the four volumes of the Final PEIS is available on CD or in printed form in limited quantities.

ES.5 COOPERATING AGENCIES

This PEIS has been prepared in cooperation with 14 federal, state, and local governmental organizations. The BLM provided numerous opportunities for coordination. These included coordination during the scoping period, providing briefings on the proposed action and formulation of the alternatives, and providing opportunities to review and comment on preliminary and internal drafts of the PEIS. The BLM held many informal meetings and discussions with the cooperating agencies. In addition, the BLM consulted with the U.S. Environmental Protection Agency (EPA) on the PEIS.

The BLM worked collaboratively with its cooperating agencies throughout the process to create a balanced commercial leasing program, consistent with the intent of Congress. The BLM originally intended the PEIS to support the amendment of land use plans to allocate areas open to commercial leasing and development of oil shale and tar sands, as well as to support the issuance of such leases. However, in consultation with the cooperating agencies, it was determined that the analysis to support immediate leasing decisions would require making many speculative assumptions regarding potential, unproven technologies, and, consequently, the decision to offer specific parcels for lease was dropped from consideration in the PEIS.

Therefore, the PEIS analyzes an allocation decision, (i.e., making lands available or open for the potential leasing of these resources). The BLM anticipates that the eventual development of the oil shale and tar sands resources would proceed in a phased approach—proceeding from this allocation decision to a leasing decision and then to an operational permit approval. The allocation decision essentially removes an administrative barrier preventing the BLM from accepting and considering applications to lease oil shale or tar sands, while prior to the leasing and development phases additional NEPA analysis will be required. This measured approach, where each step builds upon a prior step, ensures that state and local communities have the opportunity to be involved and are fully informed of the activities associated with the program. The allocation decisions would open the areas in question for leasing. The phrase “available for application for leasing” is used above, and throughout the PEIS, rather than “available for leasing” to highlight that, unlike BLM's practice with respect to oil and gas leasing, discussed

in Section 1.1.1, additional NEPA analysis would be required prior to the issuance of any lease of oil shale or tar sands resources.

ES.6 FACTORS COMMON TO BOTH OIL SHALE AND TAR SANDS

Prior to issuance of any commercial oil shale or tar sands lease on lands designated as available for application, an additional NEPA analysis will be conducted. While the term “commercial lease” is used throughout the PEIS, as discussed at Section 1.4.1, the BLM may consider issuing commercial leases or research, development, and demonstration (RD&D) leases, or both, in the areas designated as available for application. The subsequent NEPA analysis would identify certain areas to be offered for lease and the constraints to which that leasing would be subject. Another similar NEPA review would also be undertaken before approval of a plan of development on a lease and would include approval of particular activities at the specific location where development would occur. Appropriate stipulations and mitigation measures would be identified as part of both of these additional NEPA analyses.

In general, applicants would be required to identify key information regarding aspects of the proposed development needed to support the NEPA review (e.g., technologies to be employed, level of planned development, anticipated off-site impacts, and strategies to comply with regulatory requirements). During that NEPA review, the BLM would identify and establish appropriate lease stipulations to mitigate anticipated impacts. In addition, the subsequent approval of project-specific plans of development also would require NEPA review to (1) consider site-specific and project-specific factors and (2) identify and require appropriate mitigation measures as needed to control impacts beyond those established in the lease stipulations. The NEPA review for the plan of development may be incorporated into the NEPA review conducted for the lease application, at BLM’s discretion, and if adequate operational data are provided by the applicant(s).

The BLM would require that the lessee conduct any commercial development in compliance with existing federal, state, and local regulatory requirements and established BLM policies, as generally described in Section 2.2 and Appendix D of the PEIS. This compliance would include, as appropriate, obtaining and complying with all permits (e.g., air, water, and waste management) required by regulatory agencies; operating within the permit constraints; completing consultation with the U.S. Fish and Wildlife Service under Section 7 of the Endangered Species Act; completing consultation with State Historic Preservation Officers, Tribal Historic Preservation Officers, and other consulting parties under Section 106 of the National Historic Preservation Act (P.L. 89-665); and compliance with any other relevant and applicable requirements. Compliance-related conditions would be developed on a project-by-project basis during site-specific analyses.

ES.7 ALTERNATIVES

ES.7.1 No Action Alternative, Oil Shale

Alternative A for oil shale is the no action alternative. Under this alternative, no amendments to existing land use plans to identify lands available for application for commercial oil shale leasing would be completed. Existing land use plans would continue to provide direction for management of public lands. Under this alternative for oil shale, there are approximately 294,680 acres currently classified in the White River Resource Management Plan (RMP) (BLM 1997) in Colorado as available for oil shale leasing, and there are approximately 58,100 acres classified as available for leasing in the Book Cliffs RMP (BLM 1985) in Utah.

ES.7.2 No Action Alternative, Tar Sands

Under Alternative A for tar sands, the BLM has assumed that there would be no commercial leasing or development of tar sands on public lands. On the basis of the lack of active interest in developing the resource, the BLM has determined that it is unlikely that commercial tar sands development would occur under the existing Combined Hydrocarbon Lease (CHL) Program. Under Alternative A, land use plans would not be amended to allow for leasing for commercial tar sands development under any program other than the CHL Program.

ES.7.3 Alternative B, Oil Shale

Under Alternative B, the BLM proposes to designate a total of 1,991,222 acres available for application for commercial oil shale leasing by amending 9 land use plans. Specifically, the lands that would be available for application include all lands within the most geologically prospective oil shale areas that are BLM-administered public lands, including split estate lands where the federal government owns the mineral rights, but excluding those lands that are exempted by statute, regulation, or Executive Order.

ES.7.4 Alternative B, Tar Sands

Under Alternative B, the BLM proposes to designate a total of 431,224 acres available for commercial tar sands leasing by amending 6 land use plans. Specifically, the lands that would be available for application include all BLM-administered public lands within the STSAs, including split estate lands where the federal government owns the mineral rights, but excluding those lands that are exempted by statute, regulation, or Executive Order.

ES.7.5 Alternative C, Oil Shale

Alternative C is similar to Alternative B except that additional lands are excluded from the area identified as available for application for commercial leasing. Under Alternative C, the BLM proposes to designate a total of 830,296 acres available for application for commercial oil shale leasing. The lands that would be available for application under Alternative C include some

of the lands that are available under Alternative B, but exclude lands that are identified as requiring special management or resource protection in existing land use plans.

ES.7.6 Alternative C, Tar Sands

Alternative C is similar to Alternative B except that additional lands are excluded from the area made available for application for commercial leasing. Under Alternative C, the BLM proposes to identify a total of 229,038 acres available for application for commercial tar sands leasing. The lands that would be available for application under Alternative C include some of the lands that are available under Alternative B, but exclude lands that are identified as requiring special management or resource protection in existing land use plans.

ES.8 SELECTION OF THE PROPOSED PLAN AMENDMENT

Alternative B for oil shale and tar sands was selected as the Proposed Plan Amendment on the basis of the following factors, consistent with the requirements of the Energy Policy Act of 2005, a balanced use and protection of resources, the analysis of potential environmental impacts, and consideration of formal comments and recommendations from cooperating agencies and the public. The alternative was designed to ensure that oil shale and tar sands technologies can operate at environmentally acceptable levels before the authorization of oil shale or tar sands development. Tables ES-1 and ES-2 summarize the main components of the proposed plan amendment for oil shale and tar sands, respectively.

ES.9 ANALYSIS OF THE IMPACTS OF THE PROPOSED PLAN AMENDMENT FOR OIL SHALE AND TAR SANDS

The action evaluated in the PEIS is to amend existing land use plans to designate lands that would be open for application for commercial oil shale or tar sands leasing. Chapter 6 of the PEIS contains the analysis of the impacts of each of the alternatives considered, compares the alternatives, and places them in the context of other ongoing developments within the study area. Chapter 6 also presents a preliminary, qualitative, analysis of the impacts of leasing and development of these resources in order to assist in informing the land use planning decision.

The PEIS discloses, under the Proposed Plan Amendment (Alternative B), that the allocation decisions opening areas to future leasing do nothing more than to remove the administrative barrier to BLM considering any application to lease. The amendment of the land use plans does not authorize any ground-disturbing activities and is not an irreversible or irretrievable commitment of resources under NEPA. Therefore, with the exception noted in the socioeconomic analysis regarding potential impacts on land values that may result from these allocation decisions, the action alternatives presented would not result in any impacts on the environment or socioeconomic setting of the area under consideration. The decisions analyzed in the PEIS serve as the first step in the process to establish a commercial oil shale and tar sands program that meets the intent of Congress while taking advantage of the best available

TABLE ES-1 Summary of the Proposed Plan Amendment for Oil Shale: Colorado, Utah, and Wyoming^a

Condition	Proposed Plan Amendment
Land use plans amended	Amend 9 existing land use plans.
Potential area made available for application for leasing (RD&D and commercial leasing)	1,991,222 acres would be available for application for commercial leasing: Colorado, 359,798 acres Utah, 630,971 acres Wyoming, 1,000,453 acres
Technologies considered	<ul style="list-style-type: none"> – In situ processes – Underground mining with surface retort – Surface mining with surface retort (only in Utah and Wyoming in areas where the overburden is 0 to 500 ft thick)
Lands excluded from commercial leasing	<ul style="list-style-type: none"> – Wilderness Areas, WSAs, and other areas that are part of the NLCS. – Existing ACECs that are currently closed to mineral development. – The MMTA in Wyoming. – Segments of rivers determined to be eligible for WSR status by virtue of a WSR inventory. – Historic trails. – Monument Valley Management Area in Wyoming. – Management Area 3, Jack Morrow Hills Planning Area in Wyoming. – Incorporated town and city limits.
Regulatory and operational constraints	All commercial development would be conducted in compliance with federal, state, and local regulatory requirements, BLM land use plans, and established BLM policies.

^a Abbreviations: ACEC = Area of Critical Environmental Concern; MMTA = Mechanically Mineable Trona Area; NLCS = National Landscape Conservation System; WSR = Wild and Scenic River; WSA = Wilderness Study Area.

information and practices to minimize impacts and ensure that states, local communities, and the public have the opportunity to be involved.

An analysis of potential direct, indirect, and cumulative impacts associated with oil shale and tar sands development based on currently known technologies is provided in Chapter 6. However, the level and degree of the potential impacts could not be quantified because this would require making many speculative assumptions regarding potential, unproven technologies,

TABLE ES-2 Summary of the Proposed Plan Amendment for Tar Sands: Utah

Condition	Proposed Plan Amendment
Land use plans amended	Amend 6 existing land use plans.
Potential area made available for application for leasing (RD&D and commercial leasing)	431,224 acres would be made available for application for commercial leasing.
Technologies considered	<ul style="list-style-type: none"> – Surface mining with surface retort – Surface mining with solvent extraction – In situ steam injection – In situ combustion
Lands excluded from commercial leasing	<ul style="list-style-type: none"> – Wilderness Areas, WSAs, other areas that are part of the NLCS. – All existing ACECs. – The Circle Cliffs STSA. – Segments of rivers determined to be eligible for WSR status by virtue of a WSR inventory. – Incorporated town and city limits.

project size, or production levels. This analysis, nevertheless, discloses potential effects associated with leasing and development to provide the decision maker available information to assist in informing the allocation decision.

ES.10 REFERENCES

Note to Reader: This list of references identifies Web pages and associated URLs where reference data were obtained. It is likely that at the time of publication of this PEIS, some of these Web pages may no longer be available or their URL addresses may have changed.

BLM (Bureau of Land Management), 1985, *Record of Decision and Rangeland Program Summary for the Book Cliffs Resource Management Plan*, Vernal District Office, Utah, May.

BLM, 1997, *White River Record of Decision and Approved Resource Management Plan*, White River Resource Area, Craig District, Meeker, Colo., July.

BLM, 2005, *Land Use Planning Handbook*, BLM Handbook H-1601-1, Washington, D.C., March.

BLM, 2006, *Summary of Public Scoping Comments for the Oil Shale and Tar Sands Resources Leasing Programmatic Environmental Impact Statement*, prepared by Argonne National Laboratory, Argonne, Ill., for Bureau of Land Management, Solid Minerals Group, Washington, D.C., Jan.

BLM, 2008, *National Environmental Policy Act Handbook*, BLM Handbook H-1790-1, Washington, D.C., January.

USGS (U.S. Geological Survey), 1980a, *Argyle Canyon–Willow Creek, Utah Tar Sand Leasing Minutes No. 9*, Minutes of the Mineral Land Evaluation Committee, Nov. 10.

USGS, 1980b, *Asphalt Ridge–Whiterocks and Vicinity, Utah Tar Sand Leasing Minutes No. 3*, Minutes of the Mineral Land Evaluation Committee, Sept. 23.

USGS, 1980c, *Circle Cliffs East and West Flanks, Utah Tar Sand Leasing Minutes No. 5*, Minutes of the Mineral Land Evaluation Committee, Sept. 23.

USGS, 1980d, *Hill Creek, Utah Tar Sand Leasing Minutes No. 6*, Minutes of the Mineral Land Evaluation Committee, Nov. 10.

USGS, 1980e, *Pariette, Utah Tar Sand Leasing Minutes*, Minutes of the Mineral Land Evaluation Committee, Nov. 10.

USGS, 1980f, *P.R. Spring, Utah Tar Sand Leasing Minutes*, Minutes of the Mineral Land Evaluation Committee, Sept. 23.

USGS, 1980g, *Raven Ridge–Rim Rock and Vicinity, Utah Tar Sand Leasing Minutes No. 8*, Minutes of the Mineral Land Evaluation Committee, Nov. 10.

USGS, 1980h, *San Rafael Swell, Utah Tar Sand Leasing Minutes No. 7*, Minutes of the Mineral Land Evaluation Committee, Nov. 10.

USGS, 1980i, *Sunnyside and Vicinity, Utah Tar Sand Leasing Minutes No. 4*, Minutes of the Mineral Land Evaluation Committee, Sept. 23.

USGS, 1980j, *Tar Sand Triangle, Utah Tar Sand Leasing Minutes No. 2*, Minutes of the Mineral Land Evaluation Committee, Sept. 23.

USGS, 1980k, *White Canyon, Utah Tar Sand Leasing Minutes No. 11*, Minutes of the Mineral Land Evaluation Committee, Nov. 10.

This page intentionally left blank.