



Background for Oil Shale Field Hearing



On **Wednesday, August 24th**, Rep. Doug Lamborn (R-CO) and Rep. Scott Tipton (R-CO) will hold [a congressional hearing to examine the prospects and challenges of oil shale development](#) in western Colorado, eastern Utah and southwestern Wyoming. In anticipation of the hearing, the following are key facts and data points about oil shale that will be central to their investigation. Please let me know what questions you have or additional information that you need.

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The Basics of Oil Shale

- Oil shale is a rock found principally in western Colorado, eastern Utah and southeastern Wyoming. It underlines more than 2 million acres of federal, state and private lands. The United States possesses roughly 70% of world's oil shale deposits.
- Oil shale contains kerogen, a petroleum precursor. With significant heat (e.g., 700 degrees for 3-4years), kerogen can be extracted from the rock. Once stabilized (requiring more energy and water), the kerogen can then be refined into a liquid fuel.
- The rock could either be mined and heated above ground in a retorter ("ex-situ"), or heated underground and the kerogen pumped to the surface ("in-situ").
- The federal government and industry have been trying to develop commercially-viable technologies since the early 1900s. While very small quantities of oil from oil shale have been produced, commercial quantities of liquid fuel have yet to be produced.
- Most famously, in 1982 following years of promises by Exxon and other major oil companies, oil shale went bust, putting 2,600 people in western Colorado out of work overnight and sending the regional economy into a tailspin.
- Oil shale is not shale oil or shale gas. Those deposits are being commercially-developed; oil shale is struck in neutral. [Visit WRA's website for more detailed information on this topic.](#)

Federal Research Program

- The 2005 Energy Policy Act required BLM to initiate a commercial research program for oil shale on federal land. Six research leases were issued in 2007; the BLM is currently evaluating three more.
- The 2007 research leases have not yielded any results. The companies are just breaking ground on their lease plots.

- Research is also taking place on non-federal land in both Colorado and Utah. Oil companies own more than 200,000 acres of private oil shale lands in Colorado, and in Utah two companies alone own or have leases on more than 65,000 acres of non-federal lands.

Economic Considerations

- Oil shale is being offered as a jobs program, despite the fact that there are no commercially-viable technologies.
- The industry leader, Shell Oil, which has been testing technologies on its private lands for decades, maintains it will be 15+ years before they know whether they can develop a viable technology, and until 2050+ until they might be able to produce large quantities.
- Western Colorado's economy is diverse – energy development, recreation, agriculture, and retirement communities form the economic backbone. According to the BLM, large scale development (1,500,000 barrels/day) would transform western Colorado into an industrial economy. Those changes would come at the expense of other sectors of the economy. Similar impacts are projected for Utah.

Water and Other Environmental Considerations

- Water: The BLM (2008), Rand Corporation (2006) and GAO (2010) predict that large scale development of oil shale could require significant quantities of water. While estimates vary, the high end would be roughly 40% more water each year than the Denver Water Board supplies to its 1.3 million customers annually.
- Air: The BLM, Rand Corporation, National Park Service and EPA warn that large scale development would further degrade air quality. Already, fossil fuel development has resulted in certain rural areas in Colorado, Utah and Wyoming having worse air quality than Los Angeles.
- Water quality: The BLM, Bureau of Reclamation and EPA warn that development could increase salt loading in the Colorado River Basin. Salinity in the Colorado River Basin is already a huge issue.
- Surface disturbance: The BLM projects 100% surface occupancy of the leased lands. As the National Wildlife Federation noted in 2008, oil shale development "will completely eliminate the value of those lands as wildlife habitat... [R]eclamation to functional systems similar to that found pre-disturbance will take in excess of 50 years."
- Climate: Barrel-to-barrel, oil shale would produce 25-75% more greenhouse gasses than conventional oil.
- Energy demands: The energy demands are staggering. [Click here for in-depth information on oil shale's energy cost.](#)
- The BLM projects a 100,000 barrel per day oil shale operation would require all of the electricity from a 1,200 Megawatt (MW) power plant. This size power plant would generate enough electricity each year to serve 1.2 million homes.
- To produce 2,400 MW, a very efficient combined cycle gas power plant would require approximately 135 billion cubic feet of natural gas, or about 10% of Colorado's gas production. By comparison, The Tennessee Valley Authority's new 880 MW plant is expected to cost approximately \$820 million and consume 160 million cubic feet of natural gas a day.
 - Energy return on investment: Independent estimates have concluded that oil shale's energy return would be 1:1 to 2:1. Some, though, suggest that development might consume more energy than it produces.