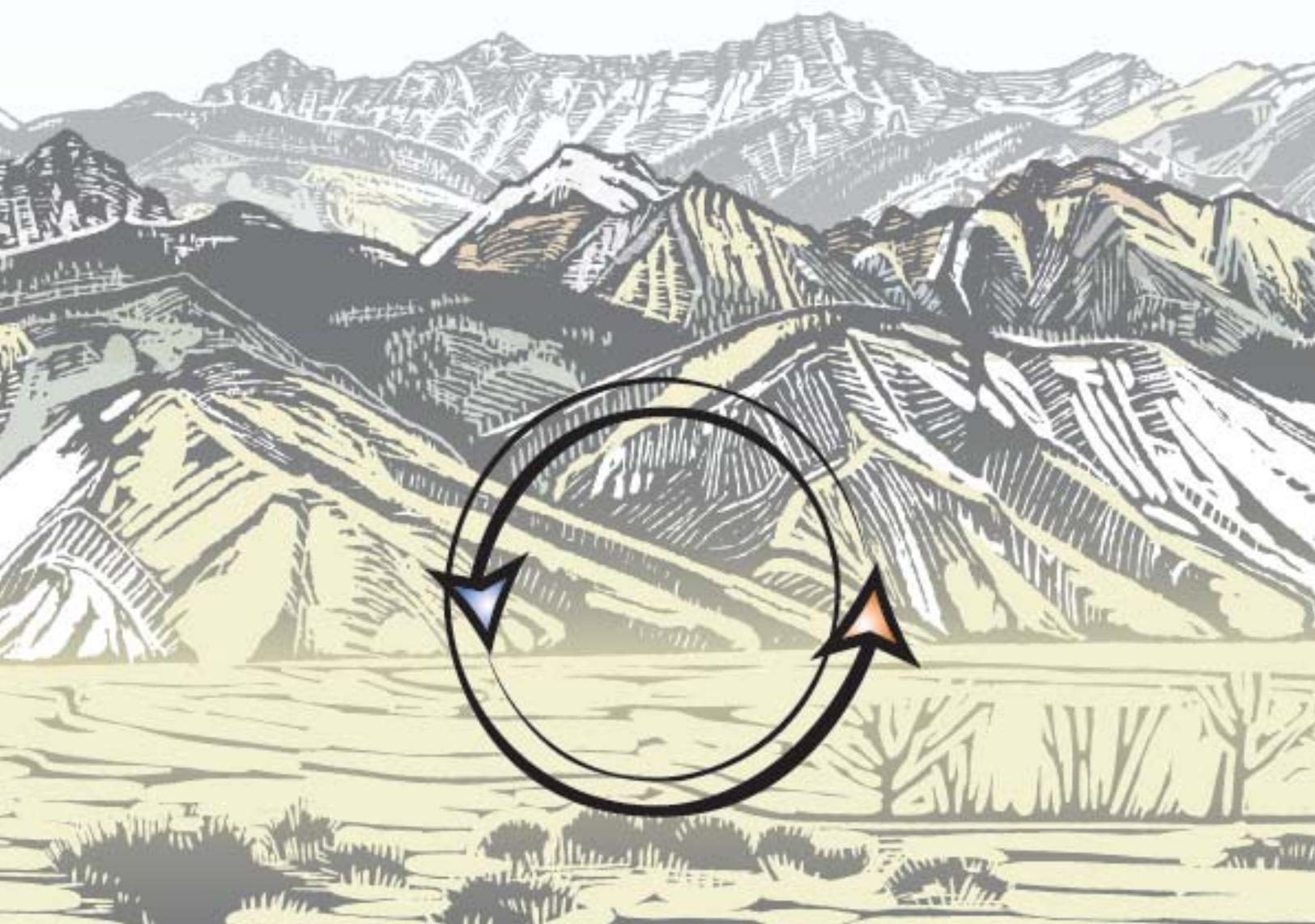




**FINAL**

Programmatic Environmental Impact Statement for  
**Geothermal Leasing**  
in the Western United States

Volume I: Programmatic Analysis  
October 2008



**FINAL**  
PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT FOR  
**GEOHERMAL LEASING**  
IN THE **WESTERN UNITED STATES**

**VOLUME I: PROGRAMMATIC ANALYSIS**

OCTOBER 2008



US DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

US DEPARTMENT OF AGRICULTURE  
UNITED STATES FOREST SERVICE



United States Department of the Interior  
BUREAU OF LAND MANAGEMENT  
Washington, DC 20240  
<http://www.blm.gov>



OCT 03 2008

Dear Reader:

In August 2005, the U.S. Congress enacted the Energy Policy Act of 2005, Public Law 109-58, which recognizes the increasing demand for renewable energy and the need to facilitate leasing decisions for geothermal resources on public lands. Section 225 of this Act, titled "Coordination of Geothermal Leasing and Permitting on Federal Lands," requires that the Secretary of the Interior and Secretary of Agriculture establish a program for reducing by 90 percent the backlog of geothermal lease applications that were pending as of January 1, 2005. The Act also mandated that action be taken by August 8, 2010.

Enclosed is the Final Programmatic Environmental Impact Statement (FPEIS) for Geothermal Leasing for lands administered by the Bureau of Land Management (BLM) (termed "public lands") and the U.S. Forest Service (FS) (termed "National Forest System lands") that have geothermal potential in the 12 western states of Alaska, Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming. The BLM and FS jointly prepared the FPEIS in collaboration with the public; tribes; federal, state, and local agencies; universities and research institutions; stakeholder organizations; and industry.

The FPEIS evaluates various alternatives for allocating lands as being closed or available for leasing and analyzes stipulations to protect sensitive resources. The document describes the proposed amendments for 122 BLM-administered land use plans, also termed resource management plans (RMP), to adopt the allocations, stipulations, procedures, and Best Management Practices analyzed in the FPEIS. In addition, the FPEIS provides site-specific analysis for 19 pending geothermal lease applications for lands within 7 geographical areas that were filed prior to January 1, 2005.

The FPEIS and proposed RMP amendments have been developed in accordance with the National Environmental Policy Act of 1969 (NEPA), the Council on Environmental Quality's regulations for implementing NEPA (40 Code of Federal Regulations [CFR] 1500-1508), the Energy Policy Act of 2005, and applicable BLM and FS authorities. The three volumes of the FPEIS contain the programmatic analysis of geothermal leasing on BLM- and FS-administered lands, the proposed RMP amendments, site-specific analysis for the 19 pending lease applications, copies of the written comments received during the public review period of the Draft PEIS, and responses to these comments.

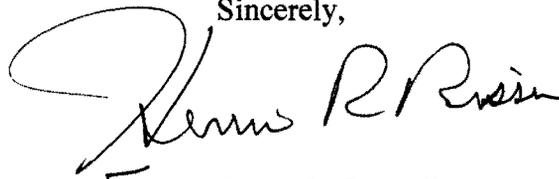
Because developing this and other alternative energy resources is of strategic importance in enhancing the Nation's domestic energy supplies, the Assistant Secretary, Land and Minerals Management, in the Department of the Interior is the responsible official for these proposed

BLM RMP amendments. The FLPMA and its implementing regulations provide land use planning authority to the Secretary of the Interior, as delegated to this Assistant Secretary. The Assistant Secretary, Land and Minerals Management will be approving these proposed RMP amendments. Therefore, there will be no administrative review (protest) of the proposed amendments under the BLM or Departmental regulations (43 CFR 1610.5-2). The Assistant Secretary, Land and Minerals Management, is the responsible official for the decision (Record of Decision) to be made with respect to the BLM RMP amendments.

As required by NEPA, the Environmental Protection Agency will publish a Notice in the *Federal Register* announcing the availability of the FPEIS for public review. The BLM is also providing a 60-day period for state governors to review the FPEIS and proposed RMP amendments for consistency with state plans. The BLM will wait until the end of this Governor's Consistency review period before signing and issuing the Record of Decision and approving the plan amendments.

The Record of Decision and approved plan amendments will be mailed or made available electronically to all who participated in the planning process. They also will be available to all parties via the Geothermal PEIS website ([www.blm.gov/Geothermal\\_EIS](http://www.blm.gov/Geothermal_EIS)) or by mail upon request.

Sincerely,

A handwritten signature in black ink, appearing to read "James L. Caswell". The signature is written in a cursive style with a large initial "J" and "C".

Fa: James L. Caswell  
Director

# Final Programmatic Environmental Impact Statement (PEIS) for Geothermal Leasing in the Western United States

**Lead Agencies:** US Department of the Interior (DOI), Bureau of Land Management (BLM)  
US Department of Agriculture, Forest Service (FS)

**Location:** Alaska, Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming

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**Project website:** [www.blm.gov/geothermal\\_eis](http://www.blm.gov/geothermal_eis)

## Abstract:

In accordance with the Energy Policy Act of 2005, the project's goal are: (1) to make geothermal leasing decisions on pending lease applications submitted prior to January 1, 2005; and (2) to facilitate geothermal leasing decisions on other existing and future lease applications and nominations on the federal mineral estate in the western United States. Approximately 143 million acres of public lands administered by the BLM and 104 million acres of National Forest System (NFS) lands contain geothermal resources suitable for commercial electrical generation and direct uses, such as heating. Lands that are part of the National Park System and National Wildlife Refuge System are closed to geothermal leasing. The BLM and FS are proposing to allocate approximately 118 million acres of public lands and 79 million acres of NFS lands as open to geothermal leasing subject to existing laws, regulations, formal orders, stipulations attached to the lease form, and terms and conditions of the standard lease form. To protect special resource values, the BLM and FS have developed a comprehensive list of stipulations, conditions of approval, and best management practices. Under the proposed action, the BLM would amend 122 land use plans to adopt the allocations and the appropriate stipulations, and the FS would use the PEIS to facilitate subsequent consent decisions for any leasing on NFS lands. An alternative to the proposed action would limit the lands available for geothermal leasing to those that are in close proximity to existing transmission lines or those under development. The no action alternative would allow the processing of pending geothermal lease applications; however, they would be evaluated on a case-by-case basis and would require additional environmental review. Based on the analysis contained in the PEIS and public comments on the Draft PEIS, the BLM has selected Alternative B as the Preferred Alternative. The PEIS also provides site-specific analysis for 19 pending lease applications submitted prior to January 1, 2005, that are located in seven geographical clusters throughout Alaska, California, Nevada, Oregon, and Washington.

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## **LIST OF ACRONYMS**

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ACEC - Area of Critical Environmental Concern

ADR - Alternative Dispute Resolution

ANCSA - Alaska Native Claims Settlement Act

ANILCA - Alaska National Interest Lands Conservation Act

APD - Application for Permit to Drill

AUM - Animal Unit Month

BLM - United States Department of the Interior, Bureau of Land Management

BMPs - Best Management Practices

C - Celsius

CA - Conservation Agreement

CERCLA - Comprehensive Environmental Response, Compensation and Liability Act

CEQ - Council on Environmental Quality

CFR - Code of Federal Regulations

COAs - Conditions of Approval

CS - Conservation Strategy

CSU - Controlled Surface Use

CX (or CE) - Categorical Exclusion

DM - Departmental Manual

DNA - Documentation of Land Use Plan Conformance and National Environmental Policy Act (NEPA) Adequacy

DOI - Department of the Interior

DR - Decision Record (for an EA)

EA - Environmental Assessment

EFH - Essential Fish Habitat

EIS - Environmental Impact Statement

EPAct of 2005 - Energy Policy Act of 2005 (Public Law 109-58, August 8, 2005)

ESA - Endangered Species Act

F - Fahrenheit

FACA - Federal Advisory Committee Act

FLPMA - Federal Land Policy and Management Act of 1976 (43 United States Code 1701 et seq.)

FONSI - Finding of No Significant Impact

FS - United States Department of Agriculture, Forest Service

FWS - Fish and Wildlife Service

GIS - Geographic Information System

IBLA - Interior Board of Land Appeals

ITAs - Indian Trust Assets

IMP - Interim Management Policy

KGRAs - Known Geothermal Resource Areas

LAC - Limits of Acceptable Change

LUP - Land Use Plan

MFP - Management Framework Plan

MOU - Memorandum of Understanding

NEPA - National Environmental Policy Act of 1969

NFMA - National Forest Management Act of 1976

NFS - National Forest System

NGD - No Ground Disturbance

NHPA - National Historic Preservation Act

NLCS- BLM's National Landscape Conservation System

NMFS - National Marine Fisheries Service

NOA - Notice of Availability

NOAA - National Oceanographic and Atmospheric Administration

NOI - Notice of Intent

NPS - National Park Service

NRCS – National Resources Conservation Service

NREL - US DOE National Renewable Energy Laboratory National Renewable Energy Laboratory

NRHP - National Register of Historic Places

NSO - No Surface Occupancy

OSHA - Occupational Safety and Health Administration

OHV - Off-Highway Vehicle

PAC - Provincial Advisory Council

PEIS - Programmatic Environmental Impact Statement

PFYC – Potential Fossil Yield Classification

PM10 - Particulate Matter Less than 10 Micrometers in Diameter

PM2.5 - Particulate Matter Less than 2.5 Micrometers in Diameter

POD - Plan of Operation and Development

Ppm - Parts per Million

RAC - Resource Advisory Council

RFD - Reasonably Foreseeable Development

RMP - Resource Management Plan

RNA - Research and Natural Area

ROD - Record of Decision (for an EIS)

ROS - Recreation Opportunity Spectrum

ROW- Right of Way

SMS - Scenery Management System

T&E - Threatened and Endangered

TL - Timing Limitation

TMDL -Total Maximum Daily Load

US - United States

USC - United States Code

USDA - United States Department of Agriculture

US DOE - United States Department of Energy

US DOI - United States Department of the Interior

US EPA - United States Environmental Protection Agency

USGS - United States Geological Survey

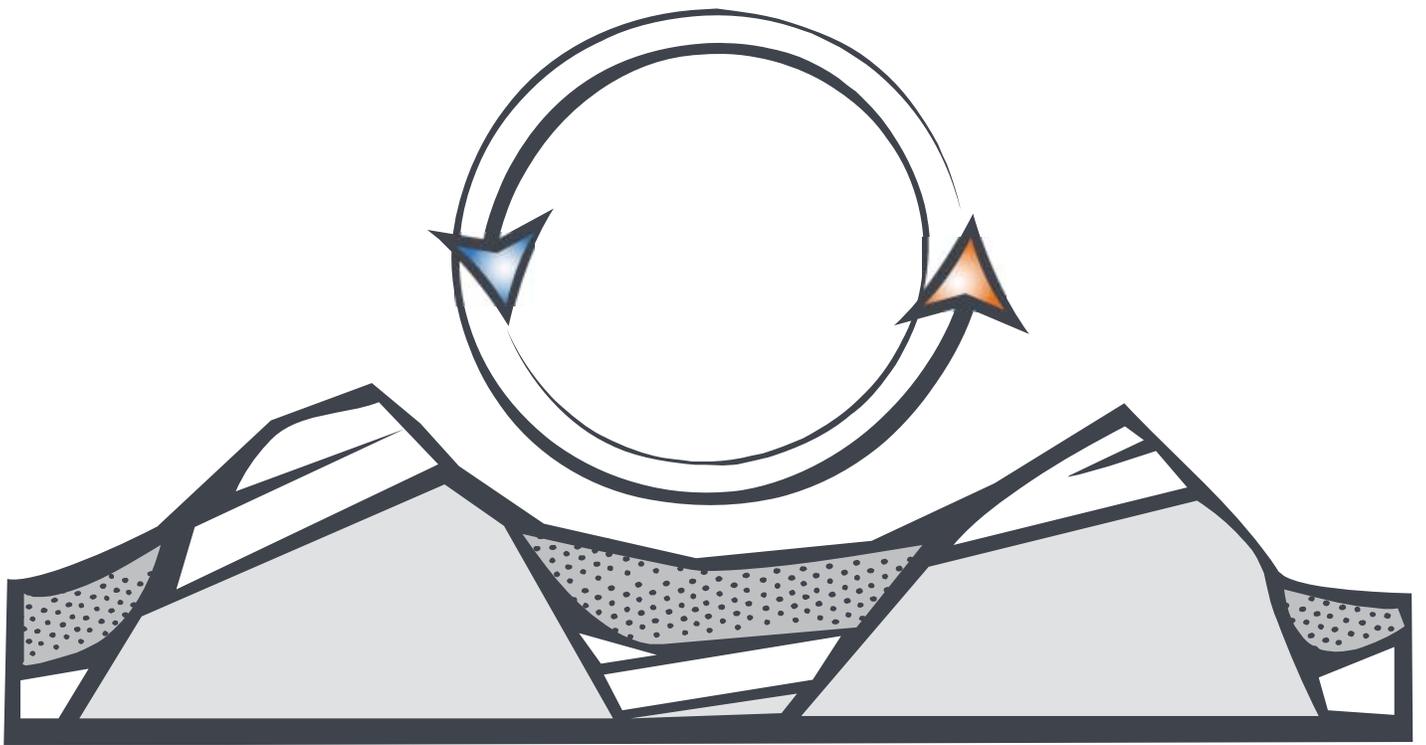
USFWS - United States Department of Interior, Fish and Wildlife Service

VRM - Visual Resource Management

WGA - Western Governors Association

WSR - Wild and Scenic River

WSA - Wilderness Study Area



# EXECUTIVE SUMMARY