

Geothermal Revenue Under the Energy Policy Act of 2005:

Income Distribution at Federal, State, and County Levels

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Summary

This report examines the changes in federal geothermal revenues since 2005, when amendments were made to the Geothermal Steam Act by the Energy Policy Act. These changes and the ensuing financial results were as follows:

- On the recommendation of a national royalty advisory committee, federal geothermal royalties are collected using a simple percentage of gross proceeds from the sale of electricity, rather than the complicated “net back” valuation system previously in place. Gross revenue from geothermal royalties increased by 14% between FY 2006 and FY 2008 .
- Industry-nominated federal land took on a system of competitive leasing. Since the change, three competitive geothermal lease sales have been held in FY 2007 and 2008 for parcels in California, Idaho, Nevada, and Utah. The three sales generated \$56 million in new income.
- Modifications were made to the distribution of geothermal revenues to federal, state, and county governments, with each now receiving 25%, 50%, and 25%, respectively. Revenue distribution to each is as follows:
 - The federal government now retains 25% of the revenues from royalties and leasing. Totalling \$13.5 million in 2007 and 2008, these revenues were placed in the Geothermal Royalty Fund to support implementation of the law.
 - State governments continue to receive 50% of geothermal revenues. In 2007 and 2008, six states—California, Idaho, New Mexico, Nevada, Oregon and Utah—collectively received \$27 million. The individual state decides how to use the funds, provided priority is given to areas socially or economically

impacted by the development of geothermal resources. Funds are used to plan, construct, and maintain public facilities and provide public services.

- Since enactment of the Energy Policy Act of 2005, county governments started receiving 25% of revenues generated within county limits. This new development has led to the distribution of \$4.3 million in 2007 and \$9.1 million in 2008 directly to county governments which use the funds to support departments directly or indirectly impacted by geothermal development. In the scope of this report, officials from 5 counties in 3 states were successfully reached to provide direct examples of how these funds were used.

The data reviewed for this report show a significant increase in federal revenue from geothermal development through both leasing revenues and federal royalties. Combined, royalties and bonus bids have produced substantial new federal revenue. In just two years, 2007 and 2008, \$82 million in new revenue has been generated by geothermal activities.¹ Data also show substantially increased payments to 6 states and to 31 county governments.

¹ The MMS distributes funds based upon the total receipt in its offices of funds by the end of every fiscal year. Because lease sales in 2007 and 2008 were held in August, significant portions of revenue generated by sales in those years were not received by the MMS until the following fiscal year. As a result, there are discrepancies between funds generated and revenues distributed by MMS.

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Introduction

In 2005, the Energy Policy Act mandated comprehensive changes to leasing and royalty policies to encourage geothermal energy use. Congress amended the Geothermal Steam Act of 1970 modifying how royalties are calculated, how land is leased, and how Federal income from geothermal development is distributed. This paper examines trends in geothermal revenues, including distribution and use of the income received by the federal government, since passage of the 2005 Energy Policy Act,.

Changes Made in 2005

The royalty system was changed to simplify how federal royalties on geothermal resources are calculated and to collect the same amount of royalty revenues annually.² Under the previous law, royalties were to be between 10% and 15% percent of the value of the steam used to produce electricity.³ Generally, leases were issued with a 10% royalty and were subject to complex regulations to determine the value of the steam, called netback.⁴ Changes to the netback system were made on the recommendation of a national royalty advisory committee.⁵

The 2005 law established geothermal royalties on the basis of a percentage of gross proceeds derived from the sale of electricity: between 1% and 2.5% for the first 10 years of production and between 2% and 5% for every year after that.⁶ The Department of the Interior chose figures of between 1.75% and 3.5% in order to approximate the equivalent value of royalties under the prior system. The two tiers were established because under

² See: Section 224(c)(3) of HR 6 enacted in 2005 directs the Secretary in writing final royalty rules, “to achieve the same level of royalty revenues over a 10-year period as the regulation in effect on the date of enactment of this subsection.”

³ Section 1004 of the Geothermal Steam Act of 1970 provided: “a royalty of not less than 10 per centum or more than 15 per centum of the amount or value of steam...”

⁴ MMS Royalty Policy Committee, Geothermal Valuation Subcommittee Report, May 2005, page 5.

⁵ The Subcommittee was directed to “look at recommending changes to geothermal royalty valuation methods, including the complex netback valuation method, to make royalty valuations more efficient and effective for government as well as ensuring that the government receives fair market value...” MMS Royalty Policy Committee, Geothermal Valuation Subcommittee Report, May 2005, page 2.

⁶ Section 224(a)(1) of HR6 enacted in 2005.

netback royalties, new projects generally paid no royalties for their first 7–8 years of operation.⁷

The change to the geothermal leasing system mirrored the on-shore oil and gas leasing system, which allows industry nominations for leasing, competitive bidding on all lands when first offered for lease, and noncompetitive leasing of any lands that were not successfully leased competitively.⁸ Under the 1970 law, only lands determined by the government to be in “known geothermal resources areas” had to be leased competitively. All other lands could be leased noncompetitively at the discretion of the Secretary of Interior.⁹

Finally, the new law also changed how federal revenue from royalties and lease sales is distributed. In the past, the federal government split the proceeds with state governments 50-50. Under the new law, the federal government retains 25%, distributing 50% to the state and 25% to the counties.¹⁰ The retained federal funds are reserved in a separate budget account for use by the Secretary of Interior to administer the provisions of the geothermal leasing law. The requirement to place these revenues in a special reserve fund expires five years after enactment of the law, or in 2010.¹¹

Since 2005

The Bureau of Land Management and the Minerals Management Service completed regulations to implement the new law in May 2007.¹² While it applies to all new leases issued, royalty rates or formulas are not automatically changed for existing leases. Existing leases can, however, be converted to new lease terms.

⁷ “Under the netback method, historically during the beginning years of an electrical generation project (between 1-10 years), lessees pay a very low percentage of the gross proceeds from the sale of electricity and in later years of the project (after 10 years), the percentage increases.” MMS Royalty Policy Committee, Geothermal Valuation Subcommittee Report, May 2005, page 10

⁸ Section 222 of HR 6 in 2005

⁹ Section 1002, Geothermal Steam Act of 1970.

¹⁰ Section 224(d) of HR 6 in 2005

¹¹ Section 234 of HR 6

¹² BLM and MMS issued final rules in the Federal Register on May 2, 2007, which took effect June 1, 2007

	2006	2007	2008	2007-2008 Total
California	10,367,876	9,264,844	11,668,670	20,933,514
Idaho	-	19,262	22,015	41,277
Nevada	1,716,374	2,526,354	2,083,791	4,610,145
Utah	197,373	252,737	267,608	520,345
Total	12,281,623	12,063,197	14,042,084	26,105,281

Table 1 shows that total revenue from the four major states has increased since 2005.¹³

Since 2005, the largest increase in revenue has resulted from new competitive lease sales. There have been three competitive geothermal lease sales in 2007 and 2008 for parcels in California, Idaho, Nevada, and Utah.¹⁴

	Jun-07	Aug-07	Aug-08	Total
California	-	8,006,800	-	8,006,800
Idaho	5,707,750	-	-	5,707,750
Nevada	-	11,418,509	27,992,464	39,410,973
Utah	3,673,560	-	-	3,673,560
Total	9,381,310	19,425,309	27,992,464	56,799,083

Table 2 shows the revenues generated by the winning bids at those lease sales.¹⁵

Revenues generated by lease sales and royalties amounted to \$40.87 million in FY 2007 and \$42 million in FY 2008.

	2007	2008	Total
California	17,271,644	11,668,670	28,940,314
Idaho	5,727,012	22,015	5,749,027
Nevada	13,944,863	30,076,255	44,021,118
Utah	3,926,297	267,608	4,193,905
Total	40,869,816	42,034,548	82,904,364

Table 3 shows total revenues from four states which had lease sales in 2007 and 2008.¹⁶

¹³ Retrieved from the Minerals Management Service Mineral Revenue Management on-line database on December 15, 2008, available at <http://www.mrm.mms.gov/MRMWebStats/Home.aspx>

¹⁴ BLM has also continued to process non-competitive leases applied for under the 1970 Geothermal Steam Act. These leases are issued for a payment of \$1 per acre and over 100,000 acres of non-competitive leases have been issued. Those funds are not included in Table 2.

¹⁵ BLM Sale Results News Releases on 06/21/07, 08/14/07, and 08/07/08

¹⁶ Source for Table 3

Distribution of Geothermal Funds

The MMS distributes funds on the basis of the total receipt by the end of every fiscal year. Because lease sales in 2007 and 2008 were held in August, significant portions of revenue from the sales were not received by the MMS until the following fiscal year. As a result, the totals in Table 4 differ significantly from results shown in Table 3.¹⁷

Fiscal Year 2007	Fiscal Year 2008	2007-2008
17,456,323	36,450,334	53,906,657

¹⁸

Under the new system of distribution, the Geothermal Royalty Fund of the federal government has received a total of \$13.5 million from revenues in FY 2007 and FY 2008 (see Table 5).¹⁹ Since 2007, the Secretary of the Interior has been given access to these funds to aid implementation of the Geothermal Steam Act of 1970 and the Energy Policy Act of 2005. Specifically, geothermal funds are used for further geothermal planning and development as well as for the coordination and processing of geothermal leases, permits, and geothermal land use authorizations on federal land. Further use of funds has gone to support environmental documents under the National Environmental Policy Act, to plan activities under the Federal Land Policy and Management Act, to staff and support BLM offices, and to conduct a National Programmatic EIS for geothermal leasing.²⁰

Six states—California, Idaho, New Mexico, Nevada, Oregon, and Utah—collectively received \$27 million for 2007 and 2008. The state can decide how to use these funds provided priority is given to areas socially or economically impacted by the development of geothermal resources in order to plan, construct, and maintain public facilities and provide public services.²¹

¹⁷ According to BLM, there is a 60 day period from the sale date to complete the transaction. Also, payment is made to the state BLM office which then transfers the funds to the MMS and there can be delays in the date of transfer as well.

¹⁸ MMS Financial Management Accounting Service, See Table 5 for further details

¹⁹ DOI News Release, 10/22/08, “Kempthorne Launches Initiative to Spur Geothermal Energy and Power Generation on Federal Lands”

²⁰ Phone interview with Kermit Witherbee, National Geothermal Program Manager at the BLM, 12/18/86

²¹ Sec.317 (a) of the Federal Land Policy and Management Act of 1976

Information on the distribution and use of geothermal revenues in the four major states receiving funds is given below²².

- State of California: Received \$4.7 million in 2007 and \$9.9 million in 2008.
All federal revenues from geothermal development are deposited in the Geothermal Resources Development Account (GRDA) within the General Fund. From these revenues, 40% is redistributed to the counties of origin, another 30% is transferred to the Renewable Resources Investment Fund, and 30% remains in the GRDA, made accessible to the California Energy Commission for grants or loans to local jurisdictions or private entities.²³
- State of Idaho: Received \$2.4 million in 2007 and \$517,000 in 2008
The state legislature mandates that 10% of profit received go back to the counties, in proportion to their contribution. The remaining 90% is directed to the recently created Office of Energy Resources, responsible for energy planning, policy, and coordination in the State of Idaho.²⁴
- State of Nevada: Received \$1.5 million in 2007 and \$7.5 million in 2008
By statute, all monies received from geothermal development are placed in the Distributive School Fund that supports K–12 schools throughout the state.²⁵
- State of Utah: Received \$127,268 in 2007 and \$146,162 in 2008.
The state redistributes the funds according to a specific formula to the Community Impact Board, which provides financial support to counties and other government agencies such as the Utah Geological Survey.²⁶

One of the most novel developments from the Energy Policy Act of 2005 has been the distribution of \$4.3 million in 2007 and \$9.1 million in 2008 directly to 31 county

²² New Mexico which received \$11,573 and Oregon which received \$135,698 were not examined.

²³ California Public Resources Code, Sections 3821, 3822, & 3825

²⁴ Phone interview with Paul Kjellander, Administrator of the Idaho Office of Energy Resources

²⁵ Phone Interview with Alan Coyner, Administrator of the Nevada Division of Minerals

²⁶ Phone Interview with John Kingsley, Associate Director of Utah Geological Survey

governments. According to BLM and MMS, the following counties received geothermal funds in these years (See Table 5):

- California: Imperial County, Inyo County, Lake County, Lassen County, Mono County, Siskiyou County, and Sonoma County.
- Idaho: Bingham County, Bonneville County, Caribou County, Cassia County, and Washington County.
- New Mexico: Dona Ana County, Hildago County
- Nevada: Churchill County, Elko County, Esmeralda County, Eureka County, Humbolt County, Lander County, Lyon County, Mineral County, Nye County, Pershing County, Washoe County, and White Pine County.
- Oregon: Deschutes County, Lake County
- Utah: Beaver County, Iron County, and Millard County.

In developing this paper, efforts were made to contact all counties that received funds to request information on how the funds are used. Officials from five counties in three states responded. Either by state mandate or by the county's decision, the funds are generally used to support departments impacted directly or indirectly by geothermal development, such as public services, emergency services, and roads and bridges. The following are summaries of phone interviews and email exchanges with these officials.

- Lander County, NV: Received \$43,434 in 2007 and \$1 million in 2008. Lander County's spending policy is to purchase capital equipment needed to support and service geothermal operations. Since these operations are often 20–40 miles out of town, vehicles with high mileage needed to be replaced. The county purchased two

ambulances for the city of Battlemountain and is considering a third ambulance for the town of Austin.²⁷

- Churchill County, NV: Received \$635,410 in 2007 and \$1.4 million in 2008.

The county purchased two fire trucks and heavy road equipment to maintain gravel roads used for geothermal activities. Realizing the importance of water to the county's agricultural and geothermal resources, Churchill County has used geothermal funds to purchase conservation easements and water rights. Additionally, the funds have also made possible the maintenance of a regional park with the additional installation of lighting and a scoreboard. "We have enjoyed and fostered a public/private partnership with the geothermal industry to enhance the industry's goals and improve the quality of life of the community," remarked Churchill County Comptroller Alan Kalt. "Geothermal development is good for Churchill County, and Churchill County works cooperatively with the geothermal industry. We look forward to becoming the geothermal capital and production leader of the United States," Kalt concluded.

- Mineral County, NV: Received \$380,000 in 2008.

In Mineral County, geothermal revenues saved the county's general fund, which is used for payroll, public safety, and emergency services, from a near \$1 million budget deficit. A portion of these funds was also provided to the Mineral County School District to support educational activities.²⁸

- Washington County, ID: Received \$359,745 in 2007.

Geothermal revenues helped the county keep its financial integrity when the Governor of Idaho declared a holdback of taxes and the county experienced unexpected capital expenses. The county used \$100,000 to rebuild the exhibit hall, \$10,000 to renovate a local senior center, and \$250,000 to settle a lawsuit, without which the county would have been forced to discontinue its ambulance service.²⁹

²⁷ Gene Etcheverry, Executive Director of Lander County

²⁸ Ed Fowler, Chainman of Mineral County Commissioners

²⁹ Sharon Widener, Washington County Clerk

- Lake County, CA: Received \$845,759 in 2007 and \$2.8 million in 2008.

"These funds—and the geothermal industry—are of vital importance to our county government and to our local communities," noted Kelly Cox, the Lake County Administrator. "The geothermal royalties enable the county to mitigate the local impact of geothermal development and provide essential public services that we would not otherwise be able to finance." A portion of the revenues went to setting up a special fund for various community improvement projects to help compensate for any loss in property tax values. Revenue has also been used to acquire and maintain parks as well as fund a portion of the cost of new facilities such as a sheriff's substation, a library, a senior citizens center, and a community downtown revitalization project.

Future Revenues

As of August 2008, the generating capacity of geothermal power in the United States was roughly 3,000 MW, distributed over seven states (Alaska, California, Hawaii, Idaho, Nevada, New Mexico, and Utah).³⁰ At that time, an additional 4,000 MW in geothermal capacity was under development in 13 states (the seven named above as well as Arizona, Colorado, Florida, Oregon, and Wyoming).³¹ Using USGS data of identified resources, the Western Governors Association (WGA) estimates future potential for geothermal power capacity to be 8,500 MW in 2015 and 15,500 MW in 2025, with most of the development happening in the Western states.³²

In December 2008, the Department of Interior approved the Geothermal Resource Leasing Programmatic Environmental Impact Statement (PEIS) which estimates the expansion of land available for geothermal development could provide an extra 5,500 MW by 2015 and 6,600 MW by 2025, assuming that 50–60% of the United States geothermal capacity continues to be located on federal lands in the future.

³⁰ Geothermal Energy Association, U.S. Geothermal Power Production and Development Update, Aug. 2008

³¹ Ibid

³² Western Governor's Association, Geothermal Task Force Report, January 2006

As additional federal lands are leased and developed, income from bonus bids and royalties can be expected to increase. For example, there was recently a fourth lease sale in December 2008 for parcels in Idaho, Oregon, Utah, and Washington. This was the first competitive lease sale since the economic recession was officially recognized, yet sale results were very positive: 100% of the parcels were auctioned off for a total revenue of \$6,542,525.³³

³³ Since this lease sale occurred in FY 2009, it was not included in this report. Results of the lease sale can be found on the Utah BLM web site at:
http://www.blm.gov/ut/st/en/info/newsroom/2008/december/blm_utah_geothermal.html.

Table 5: Distribution of Federal Revenues from Geothermal Activities to Federal, State and County Governments for fiscal years 2007 and 2008 ³⁴

	FY 2007	FY 2008	2007-2008
Total Federal Revenues	17,456,323	36,450,334	53,906,657
Distributed to Federal Government	4,364,080.20	9,112,583.21	13,476,663.41
Distributed to State Governments	8,732,217.17	18,183,956.07	26,916,173
Distributed to County Governments	4,360,025.63	9,153,794.72	13,513,820.35
California State and County Total:	6,980,400.02	14,874,680.83	21,855,081
State of California	4,652,848.44	9,888,239.00	14,541,087
Imperial County	31,708.12	113,260.31	144,968
Inyo County	301,819.36	246,745.75	548,565
Lake County	845,759.45	2,780,976.80	3,626,736
Lassen County	14,014.89	16,944.66	30,960
Mono County	31,478.73	54,175.82	85,655
Siskiyou County	14,980.75	24,602.51	39,583
Sonoma County	1,087,790.28	1,749,735.98	2,837,526
Idaho State and County Total:	3,533,307.00	775,594.63	4,308,902
State of Idaho	2,355,587.00	517,001.30	2,872,588
Bingham County	26.73	33.41	60
Bonneville County	46.77	40.09	87
Caribou County	-	324.83	325
Cassia County	817,901.50	257,325.00	1,075,227
Washington County	359,745.00	870.00	360,615
New Mexico State and County Total:	10,559.25	6,842.48	17,402
State of New Mexico	7,039.50	4,533.68	11,573
Dona Ana County	2,269.25	987.30	3,257
Hildago County	1,250.50	1,321.50	2,572
Nevada State and County Total:	2,282,554.24	11,351,161.05	13,633,715
State of Nevada	1,526,366.30	7,555,430.09	9,081,796
Churchill County	635,410.97	1,391,112.41	2,026,523
Elko County	6,487.50	16,486.00	22,974
Esmeralda County	13,789.69	18,952.14	32,742
Eureka County	5,559.97	5,410.63	10,971
Humbolt County	6,322.00	62,697.09	69,019
Lander County	43,343.44	1,027,340.70	1,070,684
Lyon County	3,491.04	3,259.79	6,751
Mineral County	-	379,806.14	379,806
Nye County	2,138.75	589,313.21	591,452
Pershing County	22,567.08	235,558.04	258,125
Washoe County	15,829.50	64,703.56	80,533
White Pine	1,248.00	1,091.25	2,339
Oregon State and County Total	94,661.43	109,203.25	203,865
State of Oregon	63,107.62	72,590.00	135,698
Deschutes County	30,926.31	35,985.75	66,912
Lake County	627.50	627.50	1,255
Utah State and County Total	190,760.86	220,268.55	411,029
State of Utah	127,268.31	146,162.00	273,430
Beaver County	63,133.09	70,130.01	133,263
Iron County	57.25	-	57
Millard County	302.21	3,976.54	4,279

³⁴MMS Financial Management Accounting Service