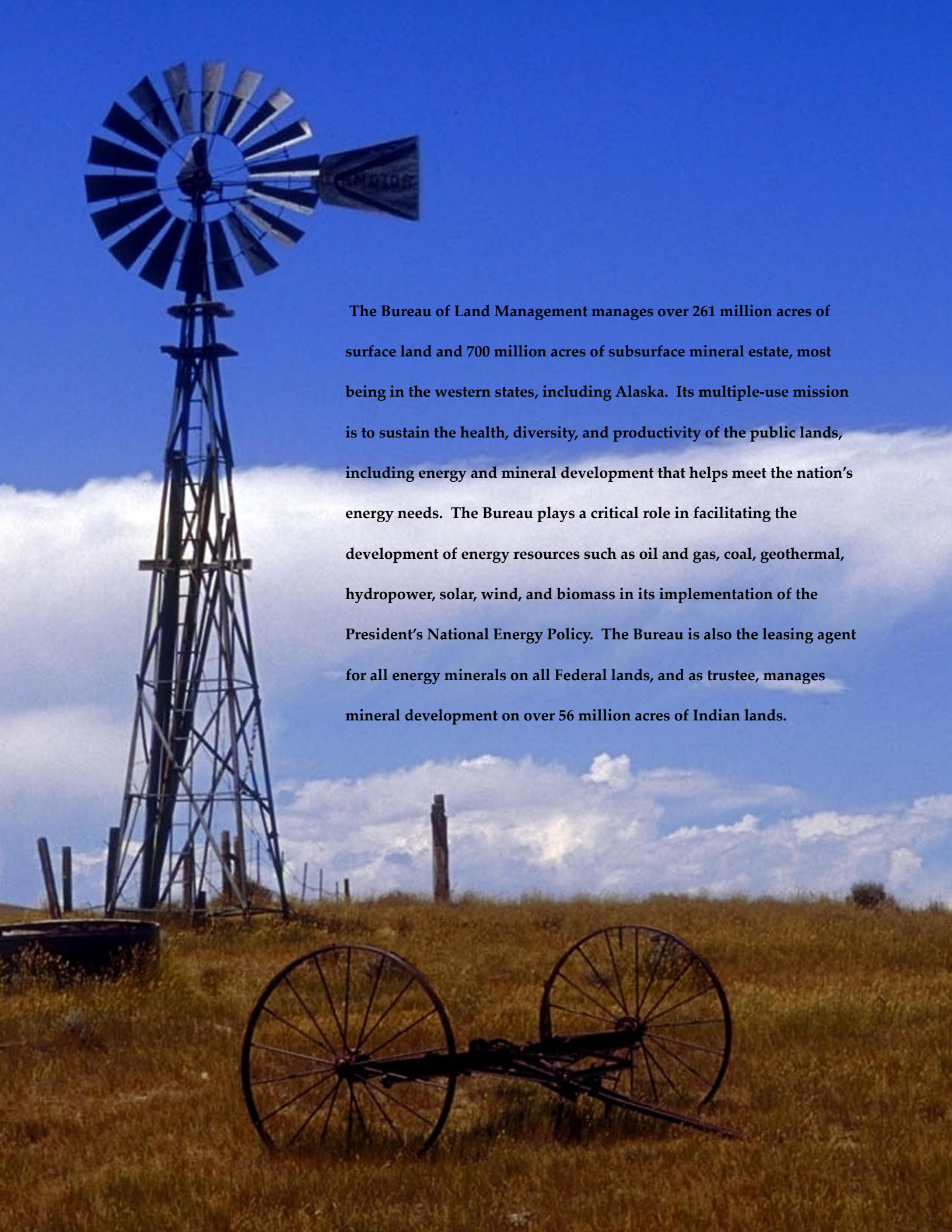


U.S. Department of the Interior
Bureau of Land Management

ENERGY FACTS

Onshore Federal Lands





The Bureau of Land Management manages over 261 million acres of surface land and 700 million acres of subsurface mineral estate, most being in the western states, including Alaska. Its multiple-use mission is to sustain the health, diversity, and productivity of the public lands, including energy and mineral development that helps meet the nation's energy needs. The Bureau plays a critical role in facilitating the development of energy resources such as oil and gas, coal, geothermal, hydropower, solar, wind, and biomass in its implementation of the President's National Energy Policy. The Bureau is also the leasing agent for all energy minerals on all Federal lands, and as trustee, manages mineral development on over 56 million acres of Indian lands.

OIL and GAS



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- Provides 62 percent of nation's energy and almost 100 percent of its transportation fuels
- Onshore Federal oil production— 5% of total domestic production
- Onshore Federal gas production— 11% of total domestic production
- Estimated 60 billion barrels of oil nationwide on all lands potentially recoverable through enhanced oil recovery projects
- Coal bed natural gas or CBNG (included in the production figures below); found associated with coal and recovered by removing water in coal beds, which lowers hydrostatic pressure in the coal, thus allowing the gas to escape
- Coal bed natural gas- In conterminous U.S., estimated resources at 700 trillion cubic feet (TCF); about 100 TCF economically recoverable with existing technology
 - Technically recoverable CBNG at 30 (TCF) (mean) in six Rocky Mountain provinces
 - Accounts for about 7.5 percent of total natural gas production in the United States
- One billion cubic feet (BCF) of natural gas supplies approximately 3.9 million households
- U.S. consumption of natural gas (2001) – 22,190 billion cubic feet
- Petroleum consumption (2001) – 19,649,000 barrels per day
- U.S. energy consumption: oil – 40%; natural gas – 25%
- About 19% of total U.S. generating capacity of 724 billion kWh from oil and gas (2000)
- Total oil sales volume produced (FY 2003) from onshore Federal lands = 600 trillion Btus
- Total gas sales volume produced (FY 2003) from onshore Federal lands = 2.2 quadrillion Btus

OIL AND GAS ACTIVITIES *(BLM Public Land Statistics, FY 2004)*

State	Producible and Service Holes*	Producible Leases	Acres in Producing Status
Alabama	27	18	6,474
Alaska	129	38	67,350
Arizona	1	0	0
Arkansas	113	151	71,588
California	5,887	304	70,339
Colorado	3,573	2,039	1,340,546
Florida	2	2	3,468
Illinois	16	8	1,581
Kansas	447	432	109,649
Kentucky	160	43	26,039
Louisiana	294	154	64,945
Maryland	9	0	0
Michigan	81	63	30,490
Mississippi	110	63	36,506
Montana	2,156	1,360	736,958
Nebraska	27	18	6,069

State	Producible and Service Holes*	Producible Leases	Acres in Producing Status
Nevada	102	29	15,498
New Mexico	25,112	6,598	3,769,487
New York	5	6	1,284
North Dakota	746	562	299,487
Ohio	495	202	36,542
Oklahoma	335	806	120,582
Pennsylvania	145	67	4,894
South Dakota	65	72	33,377
Tennessee	9	3	2,296
Texas	332	181	113,398
Utah	3,745	1,235	916,106
Virginia	15	11	10,555
Washington	1	0	0
West Virginia	290	161	54,987
Wyoming	18,943	7,263	3,719,919
Total	63,370	21,889	11,671,414

*Wells with one or more producible oil or gas service completions.

OIL AND GAS SALES AND REVENUES *(MMS Mineral Review, FY 2004)*

State	Oil Sales Volume (bbls)	Royalty Revenues (\$)	Gas Sales Volume (MCF)	Royalty Revenues (\$)
Alabama	262,249	929,356	681,990	406,837
Alaska	297,556	1,000,456	30,438,714	8,241,241
Arkansas	2,214	7,081	6,902,885	4,083,430
California	15,827,500	21,924,000	6,733,922	4,279,993
Colorado	3,998,996	15,188,924	111,355,670	43,703,409
Florida	1,200	3,619	----	----
Illinois	45,925	142,300	----	----
Kansas	28,126	84,802	13,907,928	6,957,948
Kentucky	9,639	3,292	294,578	109,379
Louisiana	657,931	2,100,178	13,462,837	8,469,430
Michigan	37,329	101,153	2,424,989	1,294,944
Mississippi	470,049	1,374,627	629,599	382,126
Montana	3,434,518	10,195,884	21,371,718	8,647,005
Nebraska	41,871	130,936	----	----
Nevada	598,796	1,498,428	----	----
New Mexico	30,336,794	91,858,280	930,158,803	400,848,183
New York	----	----	18,310	10,913
North Dakota	5,038,396	17,776,148	7,282,857	2,996,728
Ohio	28,501	31,216	845,674	397,899
Oklahoma	150,201	390,635	12,070,082	6,047,082
Pennsylvania	69	179	93,769	24,380
South Dakota	172,609	567,068	262,814	81,748
Texas	438,329	1,481,649	24,018,895	12,933,238
Utah	4,121,756	10,636,752	126,362,710	47,053,522
Virginia	----	----	73,380	37,611
West Virginia	----	----	759,958	346,731
Wyoming	33,345,702	84,547,529	911,199,107	357,110,212
Total	99,346,256	261,974,494	2,221,352,097	914,103,989

OIL AND GAS ACTIVITY OVER FIVE-YEAR PERIOD *(BLM PUBLIC LAND STATS, FY 2004)*

Year	Competitive Leases		Non-Competitive Leases		Other Types of Leases	
	No.	Acres	No.	Acres	No.	Acres
2000	24,339	16,792,130	23,171	18,022,788	2,524	810,430
2001	26,330	17,031,579	23,051	18,478,799	2,525	796,977
2002	28,317	20,781,874	23,327	19,443,008	2,511	768,574
2003	28,799	21,461,003	23,121	19,299,378	2,515	768,628
2004	21,646	16,744,795	21,669	17,934,651	2,521	766,998

Year	Total Leases in Effect		Total Leases Issued		APD's*	Producible
	No.	Acres	No.	Acres	Approved	Leases
2000	50,034	35,625,348	2,900	2,650,493	3,066	21,531
2001	51,870	37,990,113	3,289	3,997,271	3,439	21,531
2002	54,200	40,993,429	2,384	2,812,606	3,372	21,529
2003	54,435	41,529,009	2,022	2,064,289	3,802	21,729
2004	45,836	35,446,444	2,699	4,157,121	6,130	21,851

*Application Permit to Drill

COAL

- Coal used almost exclusively to generate electricity
- Coal power plants accounting for over 51 percent of all U.S. electricity generation of 1,966 billion kWh (2000)
- U.S. energy consumption: coal – 22%
- Total coal demonstrated reserve base in U.S. – 501.1 billion tons (2001)
- Total short tons of coal produced (FY 2003) from Federal lands - 10.2 quadrillion Btus



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FEDERAL COAL LEASES (BLM PUBLIC LAND STATISTICS, FY 2004)

State	Number of Leases	Acres
Alabama	3	1,730
Alaska	2	5,148
Colorado	54	78,704
Kentucky	6	5,378
Montana	29	44,081
New Mexico	13	31,716
North Dakota	13	5,408
Oklahoma	9	14,086
Utah	85	106,805
Washington	2	521
Wyoming	84	163,001
Total	301	456,578

COAL SALES AND REVENUES (MMS MINERAL REVIEW, FY 2003)

State	Sales Volume* (short tons)	Royalties/Revenues (\$)
Alabama	---	---
Colorado	21,168,432	28,010,112
Kentucky	---	---
Montana	23,164,925	36,973,528
New Mexico	112,837,091	42,020,459
North Dakota	361,326	167,323
Oklahoma	709,058	567,732
Utah	17,440,361	21,595,527
Washington	2,260,822	4,768,258
Wyoming	380,177,079	321,076,791
Total	458,119,094	455,179,730

*Sales volumes are edited cursorily due to resource constraints

GEOTHERMAL



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- Geothermal energy accounting for 17 percent of renewable electricity generation, and 0.4 percent of total U.S. electricity supply of 14 billion kWh (2000)
- Most activity in California and Nevada; other active states– Utah, New Mexico, and Oregon
- California: geothermal energy displaces need for over 9 million barrels of oil per year
- California: 40 percent of world’s geothermal-generated energy produced in Federal land non-Federal power plants
- Percent of production from BLM leases of the nation’s Federal geothermal production energy from geothermal resources:

California	87%	Nevada	9%
New Mexico	<1%	Utah	3%

GEOTHERMAL ACTIVITIES (BLM PUBLIC LAND STATISTICS, FY 2004)

State	Producing Wells	Injection Wells	Producing Leases	Direct Use ⁽¹⁾ (BTUs)	Total Electrical Generation (GW-hr)
California	273	90	23	140,000	4,109 ⁽²³⁾
Nevada	45	20	24	1,174 ⁽¹⁾	1,120 ⁽⁹⁾
New Mexico	1	0	2	0 ⁽²⁾	0
Utah	4	4	6	0	217 ⁽²⁾
Total	323	114	55	141,174	6,446

() Indicates the number of Direct Use facilities or power plants.

(1) Provides an alternative source of energy for greenhouses, tilapia farms, and other commercial uses

GEOTHERMAL REVENUES (MMS MINERAL REVIEW, FY 2003)

State	Sales Volume (in millions of BTU)	Royalties/ Revenues(\$)
California	8,448,976	5,866,852
Nevada	6,981,462	3,323,176
Utah	779,684	175,429
Total	16,210,124	9,365,457

GEOTHERMAL REVENUES FROM HOT WATER OR DIRECT USE

(MMS MINERL REVIEW, FY 2003)

State	Sales Volume* (in millions of BTU)	Royalties/ Revenues (\$)
California	278,102	62,935
Nevada	19,773	8,880
New Mexico	779,958	93,595
Total	1,077,833	165,410

GEOTHERMAL LEASES

(Competitive & Non-Competitive Public Domain & Acquired Lands)
(BLM PUBLIC LAND STATISTICS, FY2004)

State	Number	Acres
California	70	98,865
Idaho	3	2,465
Nevada	242	356,861
New Mexico	4	4,581
Oregon	57	54,151
Utah	9	8,047
Total	385	522,970



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WIND

- Accounts for 6 percent of renewable electricity generation and 0.1 percent of total energy supply of 6 billion kWh (2000)
- About 20 percent of installed energy capacity on Federal lands
- Abundant wind energy potential: West, Great Plains, and New England
- Nevada: largest potential for wind development; approximately 46 percent of 22 million acres of BLM administered land with commercial energy development potential
- California wind energy project: 2,960 wind turbines installed on public lands with capacity to generate 315 megawatts of electrical power; can supply needs of about 300,000 people
- Currently 22 wind-energy right-of-way authorizations for wind energy production on public lands in California and Wyoming covering approximately 5,000 acres; can generate about 500 megawatt hours of electrical power
- Additional 9 right-of-way authorizations for wind energy site testing and monitoring activities in Idaho, Nevada, Oregon, and Washington
- Extension of Federal wind energy production tax credit and State-level tax credits generating renewed interest in commercial wind energy projects on public lands
- 60 new applications in Arizona, Nevada, Idaho, California, Utah, New Mexico, and Wyoming

RIGHTS OF WAY

- Provides access for electrical transmission lines, oil and gas pipelines, roads, telephone/telegraph lines, water pipelines, and communication sites.



NUMBER OF EXISTING RIGHTS OF WAY (BLM PUBLIC LAND STATISTICS, FY 2004)

Administrative State	*MLA	**FLPMA/ Other	Total	Rents(\$)
Alaska	10	1,093	1,103	276,474.18
Arizona	290	4,326	4,616	1,074,172.77
California	243	5,577	5,820	2,401,884.78
Colorado	1,201	4,866	6,067	691,351.53
Eastern States	18	47	65	1,374.52
Idaho	110	4,885	4,995	750,372.62
Montana	308	3,239	3,547	141,244.34
Nevada	112	7,338	7,450	2,471,473.94
New Mexico	17,776	8,328	26,104	1,448,680.64
Oregon	22	8,975	8,997	562,256.17
Utah	788	4,231	5,019	708,527.95
Wyoming	5,833	9,453	15,286	1,476,824.80
Total	26,711	62,385	89,069	12,005,257.98

*Mineral Leasing Act

**Federal Land Policy and Management Act of 1976 (Public Law 94-597)

Of these ROWs:

- 13,400 are electric transmission linear
- 25,401 are oil and gas pipelines
- 4,638 are telephone/telegraph lines
- 44,527 other other ROWs for roads, water pipelines, communication sites, et al
- Total length of authorized ROWs (assumes average width of 100 feet):

Transmission lines	71,613 miles
Oil and gas pipelines	36,310 miles
Telephone/telegraph	4,638 miles
- Total area of electrical transmission lines 868,035 acres
- Total area of oil and gas pipelines 220,062 acres
- Total area of telephone/telegraph lines 54,274 acres
- Total area of non-linear and other types of ROWs 5,484,347 acres



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SOLAR

- Solar energy from the sun used to generate electricity, heat water, and heat, cool and light buildings
- Accounts for 1 percent of renewable electricity generation and 0.02 percent of total U.S. electricity supply of 0.5 billion kWh (2000)
- No pending applications or existing right-of-way authorization on BLM public lands for large concentrated solar power commercial generating facilities
- BLM generating 177 megawatt hours of electricity from photovoltaic systems each year from over 600 installations
- BLM a leader in implementing cost effective photovoltaic systems and demonstrating appropriate use of the technology



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BIOMASS

- Organic matter can be used to provide heat, make fuel, and generate electricity
- Accounting for 76 percent of renewable electricity generation and 1.6 percent of total U.S. electricity supply of 61 billion kWh (2000)
- BLM managing 55 million acres of forest and woodlands
- Primary focus of biomass thinning treatments – restore long-term ecological function
- BLM developing biomass utilization strategy to address forest health and restoration concerns; reduce hazardous fuels
- Estimated 12 million acres in need of restoration which could lead to biomass removal
- Estimated 120,000 acres per year needing biomass treatments- could lead to an estimated 650 gigawatt hours of electricity per year



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HYDROPOWER

- BLM - the primary agency with responsibility for the initial identification and evaluation of potential waterpower sites
- The Federal Power Act of 1920 (FPA) – the principal authority for authorizing non-Federal development of water on Federal lands
- BLM - permits non-government agencies to build dams and reservoirs on Federal lands through issuance of rights-of-way
- Currently 40 hydroelectric projects on BLM lands subject to license renewal over next 10 years
- Accounting for about 7 percent of total power generation; fourth largest source of U.S. electricity generation of 276 billion kWh (2000)
- States depending heavily on waterpower as source of energy: Idaho, Washington, Oregon, Maine, South Dakota, California, Montana, and New York
- Energy production from Bureau of Reclamation dams not included

OIL SHALE

- Oil shale resources in the U.S. enormous; over 50% of world's estimate of 2.6 trillion barrels of oil from oil shale resource
- Green River oil shale deposits largest with estimated 1.5 trillion barrels of oil
- Federal Government owns approximately 72% of oil shale acreage
- In Colorado; Federal Government owns approximately 78% of surface acreage and 82% of shale oil in-place
- Original oil shale leases, Ca, Cb, Ua, and Ub relinquished
- No Federal oil shale leases at this time
- Research and development leasing proposal is underway



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URANIUM/ NUCLEAR

- Uranium (U₃O₈) reserves and resources - 268 million pounds @ \$30 per pound forward cost (operating and capital costs); 1,422 million pounds @ \$100 forward costs (2001)
- Total production of uranium in U.S. - estimated 2,344,107 pounds (2002)
- No exploratory holes drilled; 1,000 development holes drilled in 2002
- U.S. energy consumption; nuclear – 8%
- Mining claims are located on Federal Lands but there is no leasing
- Almost 20% share of total U.S. generating capacity of 754 billion kWh (2000)
- Nuclear fuel costs low and well below that of major competing fossil fuels

TAR SANDS

- Estimated resource in U.S.- 40 to 76 billion barrels of oil
- Economics and technology hinder development
- No tar sands leases on Federal lands at present

US ENERGY CONSUMPTION BY ENERGY SOURCE: 2000 ACTUAL AND EIA FORECAST for 2025

	Actual 2000		EIA Forecast for 2025	
	Quadrillion BTU	% of Total	Quadrillion BTU	% of Total
Traditional Sources				
Petroleum Products	38.39	38.60%	56.22	40.40%
Natural Gas	24.07	24.20%	25.81	25.73%
Coal	22.64	22.76%	29.42	21.14%
Nuclear Power	7.87	7.91%	8.43	6.06%
Conventional Hydropower	2.84	2.86%	3.12	2.24%
Other	0.31	0.31%	0.07	0.05%
Sub Total-Traditional	96.12	96.64%	133.07	95.62%
Non-Hydro Renewables				
Geothermal	0.30	0.30%	1.02	0.73%
Wood	0.41	.41%	0.40	0.29%
Other Biomass	2.07	2.08%	3.42	2.46%
Municipal Solid Waste	0.31	0.31%	0.44	0.32%
Solar Thermal, Electric & Hot Water	0.06	0.06%	0.09	0.06%
Solar Photovoltaic	0.00	0.00%	0.01	0.01%
Ethanol	0.14	0.14%	0.34	0.24%
Wind	0.05	0.05%	0.37	0.27%
Sub Total-Non Hydro Renew.	3.34	3.36%	6.09	4.38%
Total	99.46	100.00%	139.16	100.00%

Title based on Energy Information Administration's (EIA) Annual Energy Outlook 2003 and from Meridian Clan Fuels, LLC

DEFINITIONS

Megawatt: 1 million watts.

Gigawatt: a unit of power equal to 1 billion watts

MCF: 1,000 cubic feet

TCF: trillion cubic feet

Bbls (barrels of liquid, i.e. oil): one barrel equals 42 U.S. gallons

BTU: British Thermal Units: amount of energy to raise temperature of 1 pound of water 1 degree Fahrenheit

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Interesting Facts

1 barrel of crude oil = 6 million Btus

•

1 billion Btus = 45 tons of coal

•

5 trillion Btus = enough energy to heat 100,000 single family homes per year in the U.S.

•

1 quadrillion (1x10¹⁵) Btus = 170 million barrels of crude oil; 45 million tons of coal;

1 trillion cubic feet of natural gas

•

Per person energy consumption in the U.S. = 323 million Btus

•

Total energy consumed in U.S. yearly = 88 quadrillion Btus

•

Worldwide energy production (1995) = 363 quadrillion Btus

•

One thousand megawatts can supply 1 million people with electrical power.

•

Coal, nuclear energy, natural gas, and hydropower account for about 95 percent of total electricity generation; oil and renewable energy contribute remainder

Cover Photo: Alaska Pipeline

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