



U.S. Department of the Interior Economic Report

FY 2016

September 25, 2017

Prepared by the Department of the Interior Office of Policy Analysis



Cover photo: *Bison - King of the Hill*

Matthew Sorum, 2015-12-17; Fargo, ND; NPS Share the Experience Photo Contest

Table of Contents

Definitions and Concepts	iv
Introduction	1
Outputs Produced, Economic Values and Economic Contributions	2
Contributors	19

List of Tables

Table 1. Interior-Managed Resources: Production Quantities and Values, FY 2008-FY 2016.....	5
<i>This table summarizes the quantities of the key outputs produced by Interior in FY 2016. The table also provides information (where readily available) on the unit economic values for each commodity. This table provides a range of economic values associated with each resource, and reports total production for the year. The table does not associate production with individual unit prices, so the report does not provide a total value for the annual production¹.</i>	
Table 2. Estimated Economic Contributions Resulting from Interior’s Activities	9
<i>This table presents information on Interior’s economic contributions, value added, and employment by activity for FY 2016.</i>	
Table 3. Summary of FY 2016 Economic Contributions by Bureau	10
Table 4. Estimated Value Added Supported by Interior Activities, by Sector and State	13
Table 5. Estimated Total Output Supported by Interior Activities, by Sector and State	15
Table 6. Estimated Total Jobs Supported by Interior Activities, by Sector and State.....	17

Definitions and Concepts

GDP: Gross domestic product measures the value of all final goods and services produced within an economy during a specified period.

Input-Output Modeling: Represents the interactions among the many sectors of the National economy, or of regional economies such as individual States.

Value Added: Measures the contribution of the DOI's activities to the Gross Domestic Product (GDP) of a regional or the National economy. Value added is the difference between DOI's estimated total output (sales or receipts and other operating income) and the cost of any intermediate inputs (consumption of goods and services purchased from other industries or imported).

Economic Output: The total estimated value of production of goods and services supported by DOI. Output is the sum of all intermediate sales (business to business) and final demand (sales to consumers and exports).

Employment: The total number of jobs supported by DOI-managed activities.

Activities: As used to estimate economic contributions, "activities" means the full range of actions associated with facilitating the use of lands and waters managed by Interior. This includes actions undertaken by the Federal government as well as subsequent actions undertaken by private sector individuals and businesses.

Inflation-Adjusted Prices: Economists refer to the "real" value of a good when the "nominal" price has been adjusted for inflation. This allows for comparing valuations for goods produced at different dates.

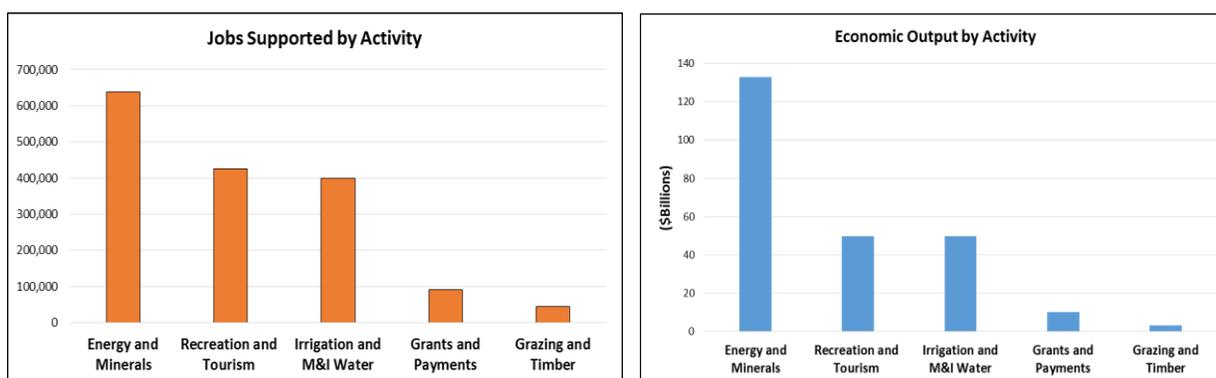
GDP deflator: An index tracking changes in the prices of final goods and services produced in an economy.

Introduction

The U.S. Department of the Interior (DOI, or Interior) plays an integral role in conserving America’s natural resources and heritage, honoring our cultures and tribal communities, and supplying the energy to power our future. Interior’s people, programs, and responsibilities impact Americans across all of the 50 States and Territories. The Department is the steward of 20 percent of the Nation’s lands, managing national parks, national wildlife refuges, and other public lands, and assisting States, tribes, and others in the management of natural and cultural resources.

The Department’s economic contributions arise as the Department carries out its unique mission, managing Federal lands and waters, and making investments that conserve and restore natural landscapes and the cultural heritage of the Nation. Departmental management also facilitates private sector activities that result in economic contributions. For example, Interior grants access to public lands and offshore areas for conventional and renewable energy development, providing roughly a quarter of the Nation’s domestic supplies of oil and natural gas. These oil and gas leasing activities allow the private sector to invest, creating economic output and employment. Similarly, the recreation opportunities provided by DOI’s lands and waters promote visitor spending, which contributes to local and regional economies. Irrigation and municipal and industrial water stored and supplied by Interior’s facilities supports private sector agricultural and urban activities. While challenging to evaluate in economic terms, the cutting edge research in geology, hydrology, and biology undertaken by DOI informs resource management and private sector decision making.

In FY 2016, production and activities on DOI lands were associated with about \$145 billion in value added, about \$254 billion in economic output, and supported an estimated 1.7 million jobs. This report includes key tables and summary information on the economic contributions associated with Interior’s activities. A more detailed set of information, including State-level results, interactive visualization tools, and supplementary materials can be found at: <https://doi.sciencebase.gov/doidv>.²



² The value of all commodities and other inputs to production associated with Interior’s activities decreased over the past year by about 15 percent in nominal terms, from \$136 billion in FY 2015 to \$115 billion in FY 2016. Much of this change reflects somewhat lower energy production and prices. This report represents the eighth in a series of annual economic reports.

Outputs Produced, Economic Values and Economic Contributions

Summary information related to economic contributions, value added, employment, and other economic values associated with Interior's diverse activities is below, followed by tables that provide additional detail.³

- **Fossil Fuel Energy:** In FY 2016, Interior-managed lands and waters produced 768 million barrels of crude oil, 4.7 trillion cubic feet of natural gas, and 310 million tons of coal. Some average prices in FY 2016 included \$41.34/bbl for oil, \$2.29/mcf of natural gas, and \$12.08 per ton of Powder River Basin coal. Oil and natural gas prices are somewhat lower than FY 2015 (\$48.66/bbl for oil and \$3.05/mcf for natural gas). Oil, gas and coal produced from Interior lands provided an estimated \$68.3 billion in value added; an estimated economic output contribution of \$117.7 billion; and supported an estimated 582,000 jobs.
- **Renewable Energy:** In FY 2016, Interior lands and facilities produced 36.7 million MWh of hydropower. Interior lands host renewable power projects for solar (6,859MW), wind (3,568 MW), and geothermal energy (1,543 MW).⁴ In FY 2016, through the Bureau of Land Management (BLM) renewable energy programs, Interior approved the installation of 287 MW in new solar power and 48 MW of geothermal projects on public lands.⁵ Renewable energy activities contributed an estimated \$3.8 billion in output and supported over 17,000 jobs.
- **Non-fuel Minerals:** In FY 2016, Interior lands produced a wide variety of minerals. For example, an estimated 80,000 kg of gold were produced from the Bureau of Land Management (BLM) lands in Nevada; the average price of gold in 2016 was \$1,170 per troy ounce. Non-fuel mineral production was associated with an estimated value added of \$6.1 billion; estimated economic output of \$11.4 billion; and estimated employment supported of about 39,000 jobs.
- **Recreation:** In FY 2016, Interior's lands hosted an estimated 473 million visits. The net economic value of a visit to Interior lands varies depending on the activity. For FY 2016, visitation to Interior sites provided an estimated \$28.1 billion in value added, \$50.0 billion in economic output, and supported about 426,000 jobs.
- **Water:** Interior stores and delivers water for irrigation, municipal and industrial (M&I), and other uses. The value of water varies widely according to location, type of use and climatic conditions. Interior's irrigation (Bureau of Reclamation (BOR) and the Bureau of Indian Affairs (BIA)) and M&I water supply activities are associated with \$28.9 billion in value added; about \$49.7 billion in economic output; and supported an estimated 399,000 jobs. Interior also delivers water to support in-stream flows, wildlife refuges, and other uses that are difficult to value fully and not typically reflected in economic contribution estimates.

³ Many activities on Interior lands are associated with external costs. As a general matter, market prices do not reflect many of these costs. Various regulations and other requirements designed to address adverse environmental impacts internalize some (but not all) of these external costs. Market prices also typically do not fully reflect various ecosystem service values provided by Interior managed lands.

⁴ Installed capacities on BLM land as of December 2016.

⁵ There were no new approvals for wind projects in FY 2016.

- **Forage and Grazing:** In FY 2016, Interior lands provided access to 8.6 million animal unit months (AUMs) of forage. Prices for forage vary widely, from the \$2.11 per AUM fee on BLM-managed lands to \$20.50 per AUM on State and private grazing lands.⁶ This production is associated with an estimated \$2.4 billion in economic output and supported about 41,000 jobs. The federal fee is an administrative price. Differences between the costs of grazing private leases and the costs of grazing public leases should also be recognized. For example, private landlords may provide additional services like fencing, water infrastructure, secure access, check-up visits, and rights to hunt, fish and timber the area.
- **Timber:** In FY 2016, about 673,000 mbf (1 mbf = 1,000 board-feet) of sawtimber was harvested on BLM and tribal lands. Approximately 66 percent of the harvest came from lands managed by BIA, while the remaining percent came from BLM-managed lands. This timber harvest was associated with about \$0.48 billion in value added, provided roughly \$1.4 billion in economic output, and supported about 6,200 jobs. In addition to traditional sawtimber, Interior forestry lands provide various other products including biomass, fuelwood, poles, posts, and a variety of other products (e.g., seeds, Christmas trees, and mushrooms). The economic contributions associated with some of these products were accounted for in this report, while others could not be explicitly analyzed.
- **Grants/Payments:** Activities related to grant and payment programs administered by Interior provided \$6.4 billion in value added; economic contributions of \$9.1 billion; and supported employment of about 84,000 jobs in FY 2016.⁷ Within these totals:
 - Indian Affairs grants to support tribal governments provided value added of \$0.9 billion, economic contributions of \$1.3 billion, and supported about 10,000 jobs.
 - Grants and payments to Insular areas⁸ supported \$0.8 billion in valued added and supported employment of about 25,000 jobs. Economic output estimates supported by these grants and payments were not readily available
- **Restoration:** Every Interior bureau engages in some form of restoration from physical structures to habitat and cultural resources: Restoration typically involves spending on construction, habitat management, etc. The employment supported by these activities can range from 12 to 30 jobs per million dollars of spending.
- **Conservation:** The value added, economic contributions, and employment supported by DOI's conservation-related activities are difficult to measure separately because conservation is often a component of recreation, ecosystem restoration, water management, and even some mineral development activities. Many benefits of nature conservation accruing to households, communities, and economies are not defined with a set of consistent metrics nor are they bought and sold in markets. This creates challenges in the valuation of these goods and services.

⁶ BLM increased the federal grazing fee to \$1.69 in 2015 and then to \$2.11 in 2016, pursuant to the statutory requirements under the Public Rangelands Improvement Act of 1978. Source for private and state grazing fee: <http://usda.mannlib.cornell.edu/usda/nass/AgriPric/2010s/2017/AgriPric-01-31-2017.pdf>

⁷ It is possible that grants and payments support some of the economic activity reported for other sectors throughout this report. We have not attempted to correct for this source of potential double-counting.

⁸ *Insular* refers to the U.S. territories of American Samoa, Guam, the U.S. Virgin Islands and the Commonwealth of the Northern Mariana Islands, as well as the sovereign nations of the Federated States of Micronesia, the Republic of the Marshall Islands, and the Republic of Palau.

- **Scientific Data:** Investments in research and development promote economic growth and innovation, ensure American competitiveness in a global marketplace, and are critical to achieving Interior's mission. Investments in Interior's research and development can improve U.S. strategic mineral supplies, understanding of ecosystem services, water use and availability, and natural hazard preparedness. Much scientific knowledge is difficult to value and monetize in markets, and hence is underprovided by the private sector. The economic values associated with the production and dissemination of scientific information are only partly incorporated in the market prices of traded goods and services. The Department's scientific, technical and engineering personnel are engaged in a broad range of cooperative activities to develop and disseminate innovative technologies, including:
 - Collaborating on 873 Cooperative Research and Development Agreements, of which 511 were new in FY 2016.
 - Engaging In at least 319 other collaborative R&D relationships.
 - Disclosure of eight new inventions. In addition, four patents were filed and one patent was received.
 - Managing 22 licenses for inventions and other intellectual property earning about \$83,000.

Table 1. Interior-Managed Resources: Production Quantities and Values, FY 2008-FY 2016

Commodity ^a		FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
Recreation ^b	<i>Visits to Interior sites (millions)</i>	n/a	415	439	434	417	407	423	443	473
	<i>Economic value per visit (2016-\$)</i>					\$37 to \$64				
Crude Oil ^c	<i>Federal production (millions of barrels)</i>	581	651	724	658	632	671	723	782	768
	<i>WTI - Average price per bbl (nominal \$)</i>	\$99.67	\$61.96	\$79.50	\$94.90	\$94.08	\$97.98	\$93.17	\$48.67	\$43.33
	<i>WTI - Average price per bbl (inflation adjusted, 2016-\$)</i>	\$118.51	\$74.19	\$92.14	\$103.35	\$98.34	\$102.40	\$99.42	\$48.66	\$41.34
Natural Gas ^d	<i>Federal production (trillions of cubic feet)</i>	6.8	6.7	6.6	6.1	5.7	5.2	5.1	4.9	4.7
	<i>Average wellhead price per thousand cubic feet (nominal \$)</i>	\$9.10	\$4.05	\$4.49	\$4.09	\$2.82	\$3.83	\$4.53	\$2.72	\$2.60
	<i>Average wellhead price per thousand cubic feet (inflation adjusted, 2016-\$)</i>	\$9.48	\$4.40	\$5.20	\$4.30	\$2.78	\$3.72	\$4.42	\$3.05	\$2.29
Coal ^e	<i>Federal production (millions of tons)</i>	508	490	478	464	461	421	424	409	310
	<i>Average price per short ton subbituminous coal (nominal \$)</i>									
	<i>Average price per short ton subbituminous coal (inflation adjusted, 2016-\$)</i>	\$12.64	\$13.62	\$13.99	\$14.88	\$9.43	\$10.91	\$11.83	\$10.19	\$12.08
Hardrock Minerals – Gold ^f	<i>Estimated gold production on Federal lands (2008-2011) and Federal lands in NV (2012-2016) (kg)</i>	100,190	95,890	99,330	100,620	76,223	76,223	77,738	74,661	79,924
	<i>Average gold price per troy ounce (calendar year) (nominal \$)</i>	\$874	\$975	\$1,227	\$1,602	\$1,673	\$1,415	\$1,269	\$1,163	\$1,270
	<i>Average gold price per troy ounce (calendar year) (inflation adjusted, 2016-\$)</i>	\$1,012	\$1,116	\$1,322	\$1,728	\$1,803	\$1,461	\$1,303	\$1,287	\$1,170

(Table continues)

U.S. Department of the Interior Economic Report, Fiscal Year 2016

Commodity^a		FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
Forage^b	<i>BLM, AUMs permitted (millions)</i>	8.6	8.6	8.7	9.1	8.9	8.5	8.3	8.3	8.6
	<i>Price per animal unit month (2016-\$)</i>	\$2.11 to \$20.50								
Timber^h	<i>BLM commercial sawtimber harvested (thousand board-feet, mbf)</i>	162,902	190,504	183,558	218,467	208,943	236,889	252,689	271,501	227,478
	<i>BIA harvested timber (mbf)</i>	530,972	426,250	396,532	359,697	333,209	336,320	261,089	344,787	445,642
	<i>Total for BLM and BIA (mbf)</i>	693,874	616,754	580,090	578,164	542,152	573,209	513,778	616,288	673,114
	<i>Average Western OR BLM received price per mbf (inflation adjusted, 2016-\$)</i>	\$197.52	\$168.82	\$100.65	\$98.66	\$124.81	\$130.02	\$155.90	\$188.97	\$217.14
Electricity Generation										
Hydroelectric	<i>Net generation (million MWh)</i>	40.8	39.5	35.8	48.6	47.5	39.8	38.0	36.1	36.7
Geothermalⁱ	<i>New approved capacity (MW)</i>	0	67.5	30	312	70	110	0	0	48
Windⁱ	<i>New approved capacity (MW)</i>	110	4	150	654	1815	826	0	0	0
Solarⁱ	<i>New approved capacity (MW)</i>	0	0	2,744	1,975	489	1,000	768	492	287
	<i>Average electricity price per MWhⁱ</i>									
	<i>Retail Price of Electricity for All Sectors, U.S. Total (nominal \$)</i>	\$97.40	\$98.20	\$98.30	\$98.90	\$98.40	\$100.70	\$104.40	\$104.10	\$102.80
	<i>Retail Price of Electricity for All Sectors, U.S. Total (inflation adjusted, 2016-\$, calendar year)</i>	\$109.37	\$109.44	\$108.23	\$106.69	\$104.23	\$104.97	\$106.91	\$105.47	\$102.80
Water Irrigation, and Municipal & Industrial	<i>Million acre-feet delivered (estimated)^k</i>	n/a	n/a	n/a	n/a	26.7	27.3	24.4	24.9	26.2
	<i>\$ per acre-foot^l</i>	\$1 to \$4,500								

(Table continues)

Commodity ^a	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
Ecosystem Services	Ecosystem services are measured in many different metrics; information on annual flows of these services is not readily available. Because most ecosystem services are not bought and sold in markets, prices are not readily available.								
Data and Information	Interior collects and provides public information ranging from satellite data to species counts. This information is a critical input that helps support private markets, the production processes of private entities, and many public sector decisions. Some of the benefits of this information are relatively well quantified, but not all of Interior's major information investments are in fields with mature standardized methods to analyze these benefits.								

Notes to Table 1.

^a Unit values are FY 2016 market values or estimated economic value, depending on the commodity. Values for prior years have been adjusted for inflation using the GDP deflator from <https://www.bea.gov/iTable>. Market prices do not always fully reflect the costs and benefits associated with production from federal lands.

^b Currently available datasets do not track visitors' activities. Low end estimate is the mean study value for "general recreation"; high end estimate is for "wildlife viewing." This range also includes activities such as sightseeing, camping, picnicking and visiting beaches. Source: John Loomis (2005) "Updated Outdoor Recreation Use Values on National Forests and Other Lands," updated to 2016-\$ using consumer price index.

^c Production is based on ONRR production volumes. Includes production on tribal land. Crude oil prices are West Texas Intermediate (WTI) calendar-year per-barrel spot prices from EIA.gov. WTI is a benchmark price used for indexing crude oil.

^d Production is based on ONRR production volumes. Includes production on Tribal land. Natural gas prices are Henry Hub calendar-year per-mcf spot prices from EIA.gov.

^e 2008-2011 coal prices from EIA.gov: http://www.eia.gov/totalenergy/data/annual/pdf/sec7_21.pdf, updated to 2016-\$ using the CPI-U; 2012-2016 price data are from ONRR Monthly Market Analysis reports

^f Gold figures for 2008-2011 are estimates of gold production from the Federal estate. Production for 2012-2016 represents production from Federal estate in Nevada based on data from the State of Nevada. Gold prices are from <https://minerals.usgs.gov/minerals/pubs/mcs/2017/mcs2017.pdf>.

^g The low-end is the 2016 value of the Federal grazing fee which represents the fair market value of grazing, beginning with a 1966 base value of \$1.23 per AUM. This value is adjusted for three factors based on costs in Western States of (1) the rental charge for pasturing cattle on private rangelands, (2) the sales price of beef cattle, and (3) the cost of livestock production. Congress also established that the annual fee adjustment could not exceed 25% of the previous year's fee; the high-end value is the 11 Western State average rental price for private forage in 2016, as reported by the USDA, NASS. Differences between the costs of grazing private leases and the costs of grazing public leases should also be recognized. For example, private landlords may provide additional services like fencing, water infrastructure, secure access, check-up visits, and rights to hunt, fish and timber the area. For FY 2016, BIA permitted an estimated 1.8 Million AUMs. Historic BIA grazing data are not available.

(Table continues)

^h Source: BLM Data. Data include sawtimber harvested for commercial use. Additional sawtimber is harvested from BLM managed lands under the Stewardship Program and Special Forest Products Program. These volumes represent a relatively small proportion of the volume and are not shown in this table. Other wood-based timber products not included in these volumes include biomass, posts, poles, fuelwood, and “other.” Nominal prices were not reported.

ⁱ Source: BLM data. Generation information is not available for these resources. The data represents approved capacity. In FY 2016 there was no new capacity approved.

^j Prices are annual average on-peak. Source: EIA – Electric Market National Overview,

^k Does not include deliveries for facilities where water users, rather than the Bureau of Reclamation, have operating and maintenance responsibilities. Irrigation-water deliveries make up about 90 percent of total deliveries; M&I deliveries make up about 10 percent. Some Reclamation-supplied water is also delivered for other uses, such as supplying National Wildlife Refuges or supporting instream flows.

^l Values depending on region, end-use, and other circumstances; the high end of the range would be relatively rare. “The Importance of Water to the U.S. Economy, Highlights Document.” EPA, Office of Water, December 2012

Table 2. Estimated Economic Contributions Resulting from Interior’s Activities

Category	Direct Economic Contribution (billions, 2016-\$)	Total Economic Contributions: Direct + Indirect + Induced¹ (billions, 2016-\$)	Value Added (billions, 2016-\$)	Total Domestic Jobs Supported
DOI Payroll ~72,000 employees in 2016	4.99	7.67	4.18	46,595
Grants & Payments to non-Federal Entities ²	4.45	9.10	6.37	84,254
Support for Tribal Governments	0.58	1.28	0.85	9,614
Public Resources as Inputs to Production				
Recreation and Tourism	25.32	49.88	28.13	426,378
Energy				
Oil, gas and coal	52.38	117.70	68.26	581,539
Hydropower	1.33	2.81	1.57	10,628
Wind Power	0.01	0.05	n/a	255
Geothermal	0.07	0.20	0.00	929
Solar	0.22	0.76	n/a	5,502
Locatable Minerals and Hardrock Leasables ³	3.41	7.97	4.18	26,747
Salable and Other Leasable minerals	1.51	3.44	1.89	12,330
Other Production				
Irrigation water	15.62	38.79	22.84	347,093
M&I water	4.23	10.92	6.09	52,155
Grazing	1.03	2.42	n/a	40,894
Timber	0.33	1.392	0.48	6,190
Total	115.45	254.39	144.85	1,651,101

¹ The direct effect is the known or predicted change in the local economy that is to be studied. The indirect effect is the business to business transactions required to satisfy the direct effect. Finally, the induced effect is derived from local spending on goods and services by people working to satisfy the direct and indirect effects.

² This category excludes payments via U.S. Treasury.

³ Contribution estimates are based on production from Federal lands in Nevada (for locatable minerals) and Eastern States (for leasable hardrock minerals primarily in Missouri) only. In addition to Nevada, locatable mineral production from Federal lands exists in many Western States. With the exception of Nevada, information on production by ownership (private, State, or Federal) was not available.

Note: Totals may not add due to rounding. The value added and economic contribution estimates do not capture output or employment effects beyond payroll spending and natural resource production. Bureaus are engaged in various other activities funded by appropriations, e.g., construction, road building, education, etc.

Table 3. Summary of FY 2016 Economic Contributions by Bureau

Production Inputs (DOI Activity)	FY 2016			
	Direct Economic Contribution ⁵ (billions, 2016-\$)	Total Economic Contribution (billions, 2016-\$)	Total Value Added (billions, 2016-\$)	Total Domestic Jobs Supported
Bureau				
National Park Service				
Recreation ¹	18.38	34.88	19.94	318,150
Fish and Wildlife Service				
Recreation	2.21	5.09	2.79	36,720
Bureau of Indian Affairs²				
Oil, gas and coal	4.18	9.58	6.02	31,809
Irrigation water	2.53	7.71	3.19	45,367
Grazing	0.02	0.05		561
Timber	0.05	0.73	0.25	3,238
Other minerals ³	0.00	0.01	0.00	23
<i>BIA Subtotal</i>	6.78	18.07	9.47	80,998
Bureau of Land Management				
Oil, gas and coal	22.10	52.67	31.36	234,429
Geothermal	0.07	0.20	0	929
Locatable Minerals and Hardrock				
Leasable Minerals	3.41	7.97	4.18	26,747
Salable and Other Leasable Minerals	1.51	3.43	1.89	12,307
Grazing	1.01	2.37		40,332
Timber	0.28	0.66	0.23	2,952
Recreation	3.32	6.68	3.62	48,139
Wind	0.01	0.05	-	255
Solar	0.22	0.76	-	5,502
<i>BLM Subtotal</i>	31.93	74.80	41.27	371,593

(Table continues)

Production Inputs (DOI Activity)	FY 2016			
	Direct Economic Contribution⁵ (billions, 2016-\$)	Total Economic Contribution (billions, 2016-\$)	Total Value Added (billions, 2016-\$)	Total Domestic Jobs Supported
Bureau				
Bureau of Reclamation				
Hydropower	1.33	2.81	1.57	10,628
Irrigation water	13.09	31.08	19.65	301,726
M&l water	4.23	10.92	6.09	52,155
Recreation	1.41	3.24	1.78	23,368
<i>BOR Subtotal</i>	20.06	48.05	29.09	387,877
Bureau of Ocean Energy Management/ Bureau of Safety and Environmental Enforcement	26.10	55.46	30.88	315,000
Subtotal: All Bureau Production Contributions	105.46	236.34	133.44	1,510,638

DOI Budgetary Items	FY 2016			
	Amount (billions, 2016-\$)	Total Economic Contribution (billions, 2016-\$)	Total Value Added (billions, 2016-\$)	Total Domestic Jobs Supported
Payroll				
National Park Service	1.40	2.16	1.18	13,095
Fish and Wildlife Service	0.68	1.04	0.57	6,330
Bureau of Land Management	0.70	1.08	0.59	6,570
Bureau of Reclamation	0.41	0.63	0.34	3,830
Bureau of Safety and Environmental Enforcement	0.08	0.13	0.07	774
(Table continues)				

DOI Budgetary Items	FY 2016			
	Amount (billions, 2016-\$)	Total Economic Contribution (billions, 2016-\$)	Total Value Added (billions, 2016-\$)	Total Domestic Jobs Supported
Bureau of Ocean Energy Management	0.06	0.09	0.05	562
Indian Affairs	0.49	0.75	0.41	4,558
US Geological Survey	0.68	1.05	0.57	6,347
Office of Surface Mining Reclamation and Enforcement	0.04	0.06	0.03	366
Office of Insular Affairs	0.01	0.001	0.001	7.34
Other Interior Offices	0.44	0.68	0.37	4,154
<i>Subtotal DOI Payroll (~72,000 employees in 2016)</i>	4.99	7.67	4.18	46,595
Grants, Payments, and Tribal Support				
Grants and Payments to non-Federal Entities ⁴	4.42	9.07	6.36	84,073
Support for Tribal Governments	0.58	1.28	0.85	9,542
<i>Subtotal Grants, Payments and Tribal Support</i>	4.72	10.00	6.99	91,196
Total DOI Production and Budget	115.45	254.39	144.85	1,651,101

¹ Recreation sales value and economic contribution estimates include values from U.S. territories.

² Does not include sales of renewable energy on tribal land.

³ Source: BIA and ONRR data. Due to data limitations, values may not match those reported by ONRR.

⁴ Excludes payments via U.S. Treasury. Does not include leasing revenues and corporate taxes that flow to the Treasury as a result of Interior's offshore mineral activities. These revenues are included in the BOEM totals

⁵ In some cases the direct economic contribution equals a sales value.

Table 4. Estimated Value Added Supported by Interior Activities, by Sector and State (FY 2016, \$ billions)

State	Recreation Value Added^{1,2}	Energy & Minerals Value Added^{2,3}	Grazing & Timber Value Added²	Major Grants & Payments Value Added⁴	DOI Payroll Value Added⁵	All Sectors Value Added⁶
Alabama	0.06	1.48	0.00	0.04	0.00	1.58
Alaska	1.41	0.36	0.00	0.10	0.08	1.95
Arizona	1.26	0.20	0.00	0.07	0.15	1.68
Arkansas	0.15	0.09	0.00	0.03	0.01	0.28
California	2.69	2.27	0.00	0.24	0.27	5.48
Colorado	0.99	2.82	0.00	0.19	0.31	4.31
Connecticut	0.00	0.10	0.00	0.01	0.00	0.12
Delaware	0.00	0.02	0.00	0.01	0.00	0.04
District of Columbia	0.60	0.00	0.00	0.00	0.04	0.64
Florida	0.79	0.77	0.00	0.05	0.05	1.66
Georgia	0.32	0.37	0.00	0.04	0.04	0.78
Hawaii	0.37	0.12	0.00	0.02	0.02	0.53
Idaho	0.25	0.22	0.01	0.05	0.06	0.58
Illinois	0.04	0.37	0.00	0.05	0.01	0.48
Indiana	0.06	0.15	0.00	0.03	0.01	0.26
Iowa	0.03	0.07	0.00	0.02	0.00	0.13
Kansas	0.03	0.14	0.00	0.03	0.01	0.20
Kentucky	0.09	0.16	0.00	0.05	0.01	0.30
Louisiana	0.05	4.61	0.00	0.04	0.04	4.74
Maine	0.24	0.03	0.00	0.01	0.01	0.29
Maryland	0.20	0.43	0.00	0.02	0.02	0.68
Massachusetts	0.46	0.18	0.00	0.02	0.04	0.69
Michigan	0.20	0.22	0.00	0.05	0.02	0.48
Minnesota	0.09	0.16	0.00	0.05	0.03	0.33
Mississippi	0.13	1.14	0.00	0.02	0.01	1.30
Missouri	0.16	0.18	0.00	0.04	0.02	0.40
Montana	0.64	0.36	0.00	0.09	0.06	1.16
Nebraska	0.03	0.06	0.00	0.02	0.01	0.12
Nevada	0.55	2.66	0.00	0.05	0.06	3.33

State	Recreation Value Added^{1,2}	Energy & Minerals Value Added^{2,3}	Grazing & Timber Value Added²	Major Grants & Payments Value Added⁴	DOI Payroll Value Added⁵	All Sectors Value Added⁶
New Hampshire	0.01	0.03	0.00	0.01	0.00	0.05
New Jersey	0.16	0.22	0.00	0.01	0.01	0.41
New Mexico	0.24	6.61	0.00	0.40	0.10	7.35
New York	0.57	0.51	0.00	0.03	0.03	1.15
North Carolina	1.05	0.39	0.00	0.04	0.02	1.50
North Dakota	0.07	2.79	0.00	0.05	0.02	2.94
Ohio	0.08	0.35	0.00	0.04	0.01	0.49
Oklahoma	0.09	0.64	0.00	0.04	0.03	0.80
Oregon	0.73	0.09	0.22	0.05	0.09	1.18
Pennsylvania	0.44	0.48	0.00	0.10	0.04	1.05
Rhode Island	0.02	0.04	0.00	0.01	0.00	0.07
South Carolina	0.10	0.15	0.00	0.02	0.01	0.28
South Dakota	0.24	0.03	0.00	0.03	0.04	0.33
Tennessee	0.56	0.14	0.00	0.04	0.02	0.76
Texas	0.28	12.84	0.00	0.09	0.04	13.25
Utah	1.24	1.68	0.00	0.15	0.07	3.14
Vermont	0.00	0.02	0.00	0.01	0.00	0.04
Virginia	0.90	0.62	0.00	0.04	0.16	1.71
Washington	0.52	0.30	0.04	0.06	0.09	1.01
West Virginia	0.05	0.06	0.00	0.05	0.02	0.17
Wisconsin	0.06	0.15	0.01	0.04	0.02	0.28
Wyoming	0.91	8.86	0.00	0.64	0.04	10.45

¹ Recreation value added based on visitor spending at units managed by BLM, BOR, FWS and NPS.

² Timber contributions are based on harvests on BLM and BIA lands. BIA timber contributions are estimated using methods based on BLM's FY 2016 per-ccf contributions for each State. Grazing value added is not available. BIA data are not included in these totals due to lack of State-specific information.

³ Energy & Minerals value added is based on activities related to onshore and offshore oil and gas, coal, non-metallic minerals, and geothermal, wind, and solar electricity generation.

⁴ Grants and Payments value added include AML, PILT, Royalties and certain other grants (Sport Fish, Wildlife Restoration, State and Tribal Wildlife Grants, Land and Water Conservation Fund with GOMESA, Historic Preservation, Coastal Impact Assistance Program, Cooperative Endangered Species Conservation Fund, Refuge Revenue Sharing).

⁵ DOI payroll value added is the economic contribution of DOI employees spending their pay.

⁶ These totals represent value added supported by energy, minerals, grazing, timber, salaries and grants and payments in each of the 50 States and the District of Columbia. The economic contributions reported in Table 4 were estimated using a national-level model that includes interstate "leakages" not captured in State-level models. Therefore, a sum of State totals would not equal the national total.

Table 5. Estimated Total Output Supported by Interior Activities, by Sector and State (FY 2016, \$ billions)

State	Recreation Total Output^{1,2}	Energy & Minerals Total Output^{2,3}	Grazing & Timber Total Output²	Major Grants & Payments Total Output⁵	DOI Payroll Total Output⁶	All Sectors Total Output⁷
Alabama	0.11	2.88	0.00	0.05	0.01	3.05
Alaska	2.35	0.51	0.00	0.13	0.14	3.13
Arizona	2.14	0.31	0.09	0.10	0.27	2.91
Arkansas	0.28	0.16	0.00	0.05	0.01	0.50
California	4.52	4.31	0.10	0.35	0.45	9.74
Colorado	1.69	4.36	0.16	0.27	0.54	7.02
Connecticut	0.00	0.18	0.00	0.02	0.00	0.20
Delaware	0.00	0.04	0.00	0.01	0.00	0.06
District of Columbia	0.87	0.00	0.00	0.00	0.08	0.95
Florida	1.33	1.37	0.00	0.07	0.09	2.86
Georgia	0.56	0.57	0.00	0.06	0.07	1.26
Hawaii	0.60	0.18	0.00	0.02	0.03	0.83
Idaho	0.50	0.35	0.46	0.08	0.11	1.50
Illinois	0.07	0.64	0.00	0.08	0.02	0.81
Indiana	0.11	0.28	0.00	0.05	0.01	0.45
Iowa	0.06	0.13	0.00	0.03	0.01	0.23
Kansas	0.06	0.24	0.00	0.04	0.02	0.37
Kentucky	0.16	0.24	0.00	0.08	0.02	0.49
Louisiana	0.09	9.82	0.00	0.05	0.07	10.04
Maine	0.42	0.05	0.00	0.02	0.02	0.50
Maryland	0.33	0.61	0.00	0.03	0.04	1.00
Massachusetts	0.73	0.32	0.00	0.02	0.06	1.13
Michigan	0.34	0.39	0.00	0.07	0.03	0.83
Minnesota	0.17	0.29	0.00	0.07	0.05	0.58
Mississippi	0.23	2.33	0.00	0.03	0.02	2.62
Missouri	0.29	0.29	0.00	0.06	0.04	0.68
Montana	1.25	0.66	0.31	0.14	0.11	2.47
Nebraska	0.06	0.09	0.00	0.03	0.02	0.20
Nevada	0.93	5.00	0.25	0.07	0.10	6.36
New Hampshire	0.01	0.05	0.00	0.02	0.01	0.08
New Jersey	0.25	0.38	0.00	0.02	0.02	0.67

State	Recreation	Energy & Minerals	Grazing & Timber	Major Grants & Payments	DOI Payroll	All Sectors
	Total Output ^{1,2}	Total Output ^{2,3}	Total Output ²	Total Output ⁵	Total Output ⁶	Total Output ⁷
New Mexico	0.45	10.10	0.34	0.56	0.19	11.64
New York	0.88	0.88	0.00	0.05	0.05	1.85
North Carolina	1.87	0.58	0.00	0.06	0.04	2.54
North Dakota	0.13	3.96	0.00	0.08	0.04	4.20
Ohio	0.14	0.63	0.00	0.06	0.02	0.85
Oklahoma	0.17	1.12	0.00	0.06	0.05	1.41
Oregon	1.32	0.15	0.83	0.07	0.16	2.54
Pennsylvania	0.75	0.85	0.00	0.17	0.07	1.83
Rhode Island	0.03	0.07	0.00	0.01	0.00	0.11
South Carolina	0.18	0.24	0.00	0.03	0.01	0.46
South Dakota	0.45	0.05	0.02	0.04	0.07	0.63
Tennessee	0.96	0.23	0.00	0.06	0.04	1.28
Texas	0.48	22.67	0.00	0.13	0.07	23.35
Utah	2.28	2.70	0.17	0.23	0.12	5.50
Vermont	0.01	0.03	0.00	0.02	0.00	0.06
Virginia	1.54	0.88	0.00	0.05	0.26	2.74
Washington	0.86	0.47	0.08	0.08	0.14	1.64
West Virginia	0.09	0.10	0.00	0.08	0.03	0.30
Wisconsin	0.11	0.27	0.01	0.06	0.04	0.50
Wyoming	1.61	13.56	0.32	0.89	0.07	16.45

¹ Recreation total output is based on visitor spending at units managed by BLM, BOR, FWS and NPS.

² Timber contributions are based on harvests on BLM and BIA lands. BIA timber contributions are estimated using methods based on BLM's FY 2016 per-ccf contributions for each State. Grazing value added is not available. BIA data are not included in these totals due to lack of State-specific information.

³ Energy & Minerals total output is based on activities related to onshore and offshore oil and gas, coal, non-metallic minerals, and geothermal, wind, and solar electricity generation. Information related to BIA's mineral activities are not available at the State level.

⁴ Grants and Payments total output include AML, Payment in Lieu of Taxes, Royalties and certain other grants (Sport Fish, Wildlife Restoration, State and Tribal Wildlife Grants, , Land and Water Conservation Fund with GOMESA, Historic Preservation, Coastal Impact Assistance Program, Cooperative Endangered Species Conservation Fund, Refuge Revenue Sharing).

⁵ DOI payroll total output is the economic contribution of DOI employees spending their pay.

⁶ These totals represent total output supported by energy, minerals, grazing, timber, salaries and grants and payments in each of the 50 States and the District of Columbia. The economic contributions reported in Table 5 were estimated using a national-level model that includes interstate "leakages" not captured in State-level models. Therefore, the sum of State totals will not equal the national total.

Table 6. Estimated Total Jobs Supported by Interior Activities, by Sector and State (FY 2016, jobs)

State	Recreation ^{1,2}	Energy & Minerals ^{2,3}	Grazing & Timber ²	Major Grants & Payments ⁴	DOI Payroll ⁵	Total ⁶
Alabama	1,246	20,437	0	516	62	22,261
Alaska	22,738	1,958	17	1,109	923	26,746
Arizona	21,688	2,009	2,347	910	1,922	28,877
Arkansas	3,563	908	0	490	116	5,077
California	40,965	22,840	1,165	2,152	2,857	69,980
Colorado	15,445	19,430	2,288	2,355	3,731	43,249
Connecticut	42	980	0	143	23	1,188
Delaware	46	235	0	113	14	407
District of Columbia	7,810	0	0	14	470	8,294
Florida	13,481	7,801	0	603	620	22,505
Georgia	6,393	3,506	0	521	477	10,897
Hawaii	5,639	1,076	0	185	227	7,128
Idaho	5,205	1,080	6,260	824	934	14,303
Illinois	616	3,543	0	615	113	4,888
Indiana	1,446	1,546	0	434	106	3,533
Iowa	729	744	0	322	50	1,845
Kansas	613	1,493	0	366	144	2,616
Kentucky	1,913	1,475	0	715	116	4,220
Louisiana	950	52,009	0	508	562	54,029
Maine	4,836	321	25	212	132	5,525
Maryland	3,409	3,722	0	222	269	7,621
Massachusetts	7,493	1,772	0	164	429	9,858
Michigan	3,827	2,216	2	599	243	6,887
Minnesota	1,634	1,572	2	590	364	4,162
Mississippi	3,090	15,467	10	361	143	19,070
Missouri	3,546	1,759	0	558	293	6,156
Montana	14,411	2,752	3,280	1,402	934	22,779
Nebraska	685	579	2	283	169	1,719
Nevada	8,414	17,540	3,499	569	735	30,757
New Hampshire	101	298	0	166	45	610
New Jersey	2,623	2,159	0	117	155	5,055
New Mexico	4,772	49,790	8,587	5,514	1,443	70,107
New York	8,509	4,812	0	305	341	13,966
North Carolina	21,915	3,614	0	557	267	26,353
North Dakota	1,363	15,034	24	759	267	17,448
Ohio	1,682	3,480	0	511	157	5,830
Oklahoma	1,599	5,756	1	571	380	8,306
Oregon	13,634	906	7,778	584	1,255	24,157
Pennsylvania	8,646	4,640	0	1,273	458	15,018
Rhode Island	249	392	0	90	16	748

U.S. Department of the Interior Economic Report, Fiscal Year 2016

State	Recreation ^{1,2}	Energy & Minerals ^{2,3}	Grazing & Timber ²	Major Grants & Payments ⁴	DOI Payroll ⁵	Total ⁶
South Carolina	2,034	1,481	0	336	88	3,939
South Dakota	5,692	355	282	417	518	7,263
Tennessee	10,594	1,358	0	518	273	12,742
Texas	4,975	125,088	0	1,007	510	131,580
Utah	24,041	12,145	4,039	2,051	883	43,159
Vermont	77	205	0	148	33	462
Virginia	17,646	5,306	0	459	1,856	25,267
Washington	8,256	2,799	904	597	943	13,499
West Virginia	1,178	585	0	773	247	2,783
Wisconsin	1,272	1,482	153	574	306	3,786
Wyoming	17,445	47,529	3,529	8,020	506	77,028

¹ Recreation jobs are based on visitor spending at units managed by BLM, BOR, FWS and NPS.

² Timber contributions are based on harvests on BLM and BIA lands. BIA timber contributions are estimated using methods based on BLM's FY 2016 per-ccf contributions for each State. Grazing value added is not available. BIA data are not included in these totals due to lack of State-specific information.

³ Energy & Minerals jobs are based on activities related to onshore and offshore oil and gas, coal, non-metallic minerals, and geothermal, wind, and solar electricity generation. Information related to BIA's mineral activities are not available at the State level.

⁴ Grants and Payments jobs include Mineral Revenue Payments, PILT, AML, and certain other grants (Sport Fish, Wildlife Restoration, State and Tribal Wildlife Grants, Land and Water Conservation Fund with GOMESA, Historic Preservation, Coastal Impact Assistance Program, Cooperative Endangered Species Conservation Fund, NPS Grants, and Refuge Revenue Sharing).

⁵ DOI payroll jobs are the economic contribution of DOI employees spending their pay.

⁶ These totals represent jobs supported by recreation, energy, minerals, grazing, timber, salaries and grants and payments in each of the 50 States. The jobs reported in Table 6, were estimated using a national-level model that includes interstate "leakages" not captured in State-level models. Therefore, the sum of State totals will not equal the national total.

Contributors

The Office of Policy Analysis would like to acknowledge the following staff of the Department of the Interior who developed economic contribution information and collaborated across bureaus and offices in order to produce this Report:

Office of the Secretary

Joel Clement

Shawn Buckner

Sarah Cline

Christian Crowley

Ann Miller

Wali Osman

Benjamin Simon

Kristin Skrabis

Adam Stern

Noah Van Gilder

National Park Service

Lynne Koontz

Bruce Peacock

Bureau of Land Management

Rebecca Moore

Josh Sidon

Fish and Wildlife Service

Peter Grigelis

Bureau of Ocean Energy Management

Sarah Peters Coffman

US Geological Survey

Catherine Cullinane Thomas

Bureau of Reclamation

Bill Taylor

DeShawn Woods

Bureau of Indian Affairs

Martin Abeyta

David Wilson

Office of Surface Mining Reclamation and Enforcement

Mark Gehlhar