

# DEPARTMENT OF ENERGY

## NATIONAL NUCLEAR SECURITY ADMINISTRATION

### Federal Funds

#### FEDERAL SALARIES AND EXPENSES

For expenses necessary for Federal Salaries and Expenses in the National Nuclear Security Administration, \$422,529,000, to remain available until September 30, 2020, including official reception and representation expenses not to exceed \$17,000.

Note.—A full-year 2018 appropriation for this account was not enacted at the time the budget was prepared; therefore, the budget assumes this account is operating under the Continuing Appropriations Act, 2018 (Division D of P.L. 115–56, as amended). The amounts included for 2018 reflect the annualized level provided by the continuing resolution.

#### Program and Financing (in millions of dollars)

Identification code 089–0313–0–1–053	2017 actual	2018 est.	2019 est.
<b>Obligations by program activity:</b>			
0010 Federal Salaries and Expenses .....	390	393	428
<b>Budgetary resources:</b>			
Unobligated balance:			
1000 Unobligated balance brought forward, Oct 1 .....	25	24	15
1021 Recoveries of prior year unpaid obligations .....	3		
1050 Unobligated balance (total) .....	28	24	15
Budget authority:			
Appropriations, discretionary:			
1100 Appropriation .....	390	387	423
1131 Unobligated balance of appropriations permanently reduced .....	–3	–3	
1160 Appropriation, discretionary (total) .....	387	384	423
1930 Total budgetary resources available .....	415	408	438
Memorandum (non-add) entries:			
1940 Unobligated balance expiring .....	–1		
1941 Unexpired unobligated balance, end of year .....	24	15	10
<b>Change in obligated balance:</b>			
Unpaid obligations:			
3000 Unpaid obligations, brought forward, Oct 1 .....	68	65	79
3010 New obligations, unexpired accounts .....	390	393	428
3020 Outlays (gross) .....	–388	–379	–423
3040 Recoveries of prior year unpaid obligations, unexpired .....	–3		
3041 Recoveries of prior year unpaid obligations, expired .....	–2		
3050 Unpaid obligations, end of year .....	65	79	84
Memorandum (non-add) entries:			
3100 Obligated balance, start of year .....	68	65	79
3200 Obligated balance, end of year .....	65	79	84
<b>Budget authority and outlays, net:</b>			
Discretionary:			
4000 Budget authority, gross .....	387	384	423
Outlays, gross:			
4010 Outlays from new discretionary authority .....	312	317	349
4011 Outlays from discretionary balances .....	76	62	74
4020 Outlays, gross (total) .....	388	379	423
4180 Budget authority, net (total) .....	387	384	423
4190 Outlays, net (total) .....	388	379	423

**Federal Salaries and Expenses.**—This account provides the Federal salaries and other expenses of the National Nuclear Security Administration (NNSA) mission and mission support staff. The Federal Salaries and Expenses appropriation allows for the creation of a well-managed, inclusive, responsive, and accountable organization through the strategic management of human capital and greater integration of budget and performance data. It also includes funding for a standardized corporate project management enterprise. Program direction for Naval Reactors is within that program's account, and program direction for Secure Transportation Asset is within the Weapons Activities account.

#### Object Classification (in millions of dollars)

Identification code 089–0313–0–1–053	2017 actual	2018 est.	2019 est.
Direct obligations:			
Personnel compensation:			
11.1 Full-time permanent .....	210	215	230

11.3 Other than full-time permanent .....	2	2	2
11.5 Other personnel compensation .....	7	7	8
11.9 Total personnel compensation .....	219	224	240
12.1 Civilian personnel benefits .....	68	69	75
21.0 Travel and transportation of persons .....	13	13	13
23.3 Communications, utilities, and miscellaneous charges .....	2	2	2
25.1 Advisory and assistance services .....	28	27	32
25.2 Other services from non-Federal sources .....	6	6	6
25.3 Other goods and services from Federal sources .....	34	32	38
25.4 Operation and maintenance of facilities .....	17	17	19
25.6 Medical care .....	1	1	1
26.0 Supplies and materials .....	2	2	2
99.9 Total new obligations, unexpired accounts .....	390	393	428

#### Employment Summary

Identification code 089–0313–0–1–053	2017 actual	2018 est.	2019 est.
1001 Direct civilian full-time equivalent employment .....	1,582	1,715	1,715
2001 Reimbursable civilian full-time equivalent employment .....	19	19	19

## NAVAL REACTORS

For Department of Energy expenses necessary for naval reactors activities to carry out the Department of Energy Organization Act (42 U.S.C. 7101 et seq.), including the acquisition (by purchase, condemnation, construction, or otherwise) of real property, plant, and capital equipment, facilities, and facility expansion, \$1,788,618,000, to remain available until expended: Provided, That of such amount, \$48,709,000 shall be available until September 30, 2020, for program direction.

Note.—A full-year 2018 appropriation for this account was not enacted at the time the budget was prepared; therefore, the budget assumes this account is operating under the Continuing Appropriations Act, 2018 (Division D of P.L. 115–56, as amended). The amounts included for 2018 reflect the annualized level provided by the continuing resolution.

#### Program and Financing (in millions of dollars)

Identification code 089–0314–0–1–053	2017 actual	2018 est.	2019 est.
<b>Obligations by program activity:</b>			
0010 Naval reactors development .....	368	365	515
0020 Program Direction .....	44	44	49
0030 S8G prototype refueling .....	124	123	250
0040 Naval reactors operations and infrastructure .....	450	447	526
0050 Construction .....	148	147	311
0060 COLUMBIA-class reactor systems development .....	214	212	138
0900 Total new obligations, unexpired accounts .....	1,348	1,338	1,789
<b>Budgetary resources:</b>			
Unobligated balance:			
1000 Unobligated balance brought forward, Oct 1 .....	7	4	2
Budget authority:			
Appropriations, discretionary:			
1100 Appropriation .....	1,420	1,411	1,789
1120 Appropriations transferred to other acct [089–0319] .....	–75	–75	
1160 Appropriation, discretionary (total) .....	1,345	1,336	1,789
1930 Total budgetary resources available .....	1,352	1,340	1,791
Memorandum (non-add) entries:			
1941 Unexpired unobligated balance, end of year .....	4	2	2
<b>Change in obligated balance:</b>			
Unpaid obligations:			
3000 Unpaid obligations, brought forward, Oct 1 .....	547	628	580
3010 New obligations, unexpired accounts .....	1,348	1,338	1,789
3020 Outlays (gross) .....	–1,267	–1,386	–1,789
3050 Unpaid obligations, end of year .....	628	580	580
Memorandum (non-add) entries:			
3100 Obligated balance, start of year .....	547	628	580
3200 Obligated balance, end of year .....	628	580	580
<b>Budget authority and outlays, net:</b>			
Discretionary:			
4000 Budget authority, gross .....	1,345	1,336	1,789
Outlays, gross:			
4010 Outlays from new discretionary authority .....	769	1,136	1,521

NAVAL REACTORS—Continued  
Program and Financing—Continued

Identification code 089—0314—0—1—053	2017 actual	2018 est.	2019 est.
4011 Outlays from discretionary balances .....	498	250	268
4020 Outlays, gross (total) .....	1,267	1,386	1,789
4180 Budget authority, net (total) .....	1,345	1,336	1,789
4190 Outlays, net (total) .....	1,267	1,386	1,789

*Naval Reactors.*—This account funds all naval nuclear propulsion work. It begins with reactor technology development and design, continues through reactor operation and maintenance, and ends with reactor plant disposal. The program ensures the safe and reliable operation of reactor plants in nuclear-powered submarines and aircraft carriers (constituting over 45 percent of the Navy's combatants), and fulfills the Navy's requirements for new nuclear propulsion plants that meet current and future national defense requirements. Due to the crucial nature of nuclear reactor work, Naval Reactors is a centrally managed organization. Federal employees oversee and set policies/procedures for developing new reactor plants and operating existing nuclear plants and the facilities that support these plants.

## Object Classification (in millions of dollars)

Identification code 089—0314—0—1—053	2017 actual	2018 est.	2019 est.
Direct obligations:			
Personnel compensation:			
11.1 Full-time permanent .....	30	30	32
11.5 Other personnel compensation .....	1	1	1
11.9 Total personnel compensation .....	31	31	33
12.1 Civilian personnel benefits .....	9	9	10
21.0 Travel and transportation of persons .....	1	1	1
25.2 Other services from non-Federal sources .....	8	8	9
25.3 Other goods and services from Federal sources .....	5	5	5
25.4 Operation and maintenance of facilities .....	1,095	1,085	1,488
31.0 Equipment .....	23	23	40
32.0 Land and structures .....	173	173	200
41.0 Grants, subsidies, and contributions .....	3	3	3
99.9 Total new obligations, unexpired accounts .....	1,348	1,338	1,789

## Employment Summary

Identification code 089—0314—0—1—053	2017 actual	2018 est.	2019 est.
1001 Direct civilian full-time equivalent employment .....	231	246	246

## WEAPONS ACTIVITIES

*For Department of Energy expenses, including the purchase, construction, and acquisition of plant and capital equipment and other incidental expenses necessary for atomic energy defense weapons activities in carrying out the purposes of the Department of Energy Organization Act (42 U.S.C. 7101 et seq.), including the acquisition or condemnation of any real property or any facility or for plant or facility acquisition, construction, or expansion, \$11,017,078,000, to remain available until expended: Provided, That of such amount, \$102,022,000 shall be available until September 30, 2020, for program direction.*

Note.—A full-year 2018 appropriation for this account was not enacted at the time the budget was prepared; therefore, the budget assumes this account is operating under the Continuing Appropriations Act, 2018 (Division D of P.L. 115–56, as amended). The amounts included for 2018 reflect the annualized level provided by the continuing resolution.

## Program and Financing (in millions of dollars)

Identification code 089—0240—0—1—053	2017 actual	2018 est.	2019 est.
Obligations by program activity:			
0020 Directed stockpile work .....	3,358	3,303	4,666
0021 Science .....	435	435	565
0022 Engineering .....	135	132	212
0023 Inertial confinement fusion ignition and high yield .....	522	519	419
0024 Advanced simulation and computing .....	660	661	703
0027 Secure transportation asset .....	243	252	278
0028 Advanced manufacturing development .....	88	86	97

0030 Infrastructure and Operations .....	2,876	2,812	3,003
0091 Defense programs (DP), subtotal .....	8,317	8,200	9,943
0179 Information technology and cybersecurity .....	190	187	221
0180 Defense nuclear security .....	687	691	691
0183 Legacy contractor pensions .....	248	247	162
0191 Non-DP activities, subtotal .....	1,125	1,125	1,074
0300 Subtotal, Weapons Activities .....	9,442	9,325	11,017
0799 Total direct obligations .....	9,442	9,325	11,017
0810 Weapons Activities (Reimbursable) .....	1,759	1,759	1,759
0900 Total new obligations, unexpired accounts .....	11,201	11,084	12,776

## Budgetary resources:

Unobligated balance:			
1000 Unobligated balance brought forward, Oct 1 .....	242	119	36
1021 Recoveries of prior year unpaid obligations .....	100		
1050 Unobligated balance (total) .....	342	119	36
Budget authority:			
Appropriations, discretionary:			
1100 Appropriation .....	9,318	9,255	11,017
1131 Unobligated balance of appropriations permanently reduced .....	-77	-13	
1160 Appropriation, discretionary (total) .....	9,241	9,242	11,017
Spending authority from offsetting collections, discretionary:			
1700 Collected .....	1,650	1,759	1,759
1701 Change in uncollected payments, Federal sources .....	87		
1750 Spending auth from offsetting collections, disc (total) .....	1,737	1,759	1,759
1900 Budget authority (total) .....	10,978	11,001	12,776
1930 Total budgetary resources available .....	11,320	11,120	12,812
Memorandum (non-add) entries:			
1941 Unexpired unobligated balance, end of year .....	119	36	36

## Change in obligated balance:

Unpaid obligations:			
3000 Unpaid obligations, brought forward, Oct 1 .....	6,861	7,710	7,895
3010 New obligations, unexpired accounts .....	11,201	11,084	12,776
3020 Outlays (gross) .....	-10,252	-10,899	-12,581
3040 Recoveries of prior year unpaid obligations, unexpired .....	-100		
3050 Unpaid obligations, end of year .....	7,710	7,895	8,090
Uncollected payments:			
3060 Uncollected pymts, Fed sources, brought forward, Oct 1 .....	-2,148	-2,235	-2,235
3070 Change in uncollected pymts, Fed sources, unexpired .....	-87		
3090 Uncollected pymts, Fed sources, end of year .....	-2,235	-2,235	-2,235
Memorandum (non-add) entries:			
3100 Obligated balance, start of year .....	4,713	5,475	5,660
3200 Obligated balance, end of year .....	5,475	5,660	5,855

## Budget authority and outlays, net:

Discretionary:			
4000 Budget authority, gross .....	10,978	11,001	12,776
Outlays, gross:			
4010 Outlays from new discretionary authority .....	4,859	7,150	8,304
4011 Outlays from discretionary balances .....	5,393	3,749	4,277
4020 Outlays, gross (total) .....	10,252	10,899	12,581
Offsets against gross budget authority and outlays:			
Offsetting collections (collected) from:			
4030 Federal sources .....	-1,552	-1,659	-1,659
4033 Non-Federal sources .....	-98	-100	-100
4040 Offsets against gross budget authority and outlays (total) ....	-1,650	-1,759	-1,759
Additional offsets against gross budget authority only:			
4050 Change in uncollected pymts, Fed sources, unexpired .....	-87		
4060 Additional offsets against budget authority only (total) .....	-87		
4070 Budget authority, net (discretionary) .....	9,241	9,242	11,017
4080 Outlays, net (discretionary) .....	8,602	9,140	10,822
4180 Budget authority, net (total) .....	9,241	9,242	11,017
4190 Outlays, net (total) .....	8,602	9,140	10,822

Programs funded within the Weapons Activities appropriation support the Nation's current and future defense posture and its attendant nationwide infrastructure of science, technology, and engineering capabilities. Weapons Activities provides for the maintenance and refurbishment of nuclear weapons to continue sustained confidence in their safety, reliability, and performance; continued investment in scientific, engineering, and manufacturing capabilities to enable certification of the enduring nuclear weapons stockpile; and manufacture of nuclear weapon components. Weapons

Activities also provides for continued maintenance and investment in the NNSA nuclear complex to be more responsive and cost effective. The major elements of the program include the following:

**Directed Stockpile Work.**—Encompasses all activities that directly support the nuclear weapons stockpile. These activities include: maintenance and surveillance; planned refurbishment; reliability assessment; weapon dismantlement and disposal; and research, development, and certification technology efforts to meet stockpile requirements. Additionally, Strategic Materials are also included in Directed Stockpile Work to recognize the investment needed in nuclear materials to maintain the viability of the enduring stockpile.

**Research, Development, Test and Evaluation.**—Focuses on scientific, technical, and engineering efforts to develop and maintain critical capabilities, tools, and processes needed to support science-based stockpile stewardship, weapons refurbishments, and continued certification of the stockpile over the long term in the absence of underground nuclear testing.

**Infrastructure and Operations.**—Provides for the base operations funding required to operate NNSA facilities and support underlying infrastructure and capabilities at the level necessary to deliver mission results in a safe and secure manner. Includes resources for cross-cutting programmatic functions such as Long Term Stewardship, Nuclear Safety Research & Development, Nuclear Criticality Safety, and the Packaging program. Modernizes NNSA infrastructure through recapitalization, capability investments, strategic development, and line-item construction projects for the enhancement of capabilities.

**Defense Nuclear Security.**—Provides protection for NNSA personnel, facilities, and nuclear weapons from a full spectrum of threats, most notably terrorism. Provides for all safeguards and security requirements including protective forces and systems at all NNSA sites.

**Secure Transportation Asset.**—Provides for the safe, secure movement of nuclear weapons, special nuclear material, and weapon components to meet projected DOE, Department of Defense (DOD), and other customer requirements. The Program Direction in this account provides for the secure transportation workforce, including the Federal agents.

**Information Technology and Cybersecurity.**—Provides information technology and cybersecurity solutions such as identity, credential, and access management to help meet energy security, and proliferation resistance.

#### Object Classification (in millions of dollars)

Identification code 089-0240-0-1-053	2017 actual	2018 est.	2019 est.
Direct obligations:			
Personnel compensation:			
11.1 Full-time permanent .....	44	44	48
11.5 Other personnel compensation .....	11	11	11
11.9 Total personnel compensation .....	55	55	59
12.1 Civilian personnel benefits .....	24	24	26
21.0 Travel and transportation of persons .....	5	5	5
23.1 Rental payments to GSA .....	35	35	35
23.3 Communications, utilities, and miscellaneous charges .....	32	32	32
25.1 Advisory and assistance services .....	392	392	430
25.2 Other services from non-Federal sources .....	438	438	480
25.3 Other goods and services from Federal sources .....	19	19	21
25.4 Operation and maintenance of facilities .....	6,957	6,911	7,980
25.5 Research and development contracts .....	127	125	160
25.6 Medical care .....	3	3	3
26.0 Supplies and materials .....	5	5	5
31.0 Equipment .....	290	275	330
32.0 Land and structures .....	1,004	950	1,391
41.0 Grants, subsidies, and contributions .....	56	56	60
99.0 Direct obligations .....	9,442	9,325	11,017
99.0 Reimbursable obligations .....	1,759	1,759	1,759
99.9 Total new obligations, unexpired accounts .....	11,201	11,084	12,776

#### Employment Summary

Identification code 089-0240-0-1-053	2017 actual	2018 est.	2019 est.
1001 Direct civilian full-time equivalent employment .....	498	554	554

#### DEFENSE NUCLEAR NONPROLIFERATION

*For Department of Energy expenses, including the purchase, construction, and acquisition of plant and capital equipment and other incidental expenses necessary for defense nuclear nonproliferation activities, in carrying out the purposes of the Department of Energy Organization Act (42 U.S.C. 7101 et seq.), including the acquisition or condemnation of any real property or any facility or for plant or facility acquisition, construction, or expansion, and the purchase of not to exceed three aircraft, \$1,862,825,000, to remain available until expended.*

Note.—A full-year 2018 appropriation for this account was not enacted at the time the budget was prepared; therefore, the budget assumes this account is operating under the Continuing Appropriations Act, 2018 (Division D of P.L. 115-56, as amended). The amounts included for 2018 reflect the annualized level provided by the continuing resolution.

#### Program and Financing (in millions of dollars)

Identification code 089-0309-0-1-053	2017 actual	2018 est.	2019 est.
<b>Obligations by program activity:</b>			
0010 Defense nuclear nonproliferation research and development .....	464	475	456
0040 International materials protection and cooperation .....	6		
0050 Fissile Materials Disposition .....	6		
0071 Global material security .....	342	326	318
0072 Material management and minimization .....	289	287	332
0073 Nonproliferation and arms control .....	125	124	130
0074 Nonproliferation construction .....	335	332	279
0075 Nuclear counterterrorism incident response .....	268	276	319
0080 Global threat reduction initiative .....	13	2	
0085 Legacy contractor pensions .....	83	83	29
0100 Subtotal, obligations by program activity .....	1,931	1,905	1,863
0799 Total direct obligations .....	1,931	1,905	1,863
0801 Global material security .....	1		
0899 Total reimbursable obligations .....	1		
0900 Total new obligations, unexpired accounts .....	1,932	1,905	1,863
<b>Budgetary resources:</b>			
Unobligated balance:			
1000 Unobligated balance brought forward, Oct 1 .....	37	65	46
1021 Recoveries of prior year unpaid obligations .....	87		
1050 Unobligated balance (total) .....	124	65	46
Budget authority:			
Appropriations, discretionary:			
1100 Appropriation .....	1,902	1,889	1,863
1120 Appropriations transferred to other accts [089-0222] .....	-8		
1131 Unobligated balance of appropriations permanently reduced .....	-22	-3	
1160 Appropriation, discretionary (total) .....	1,872	1,886	1,863
Spending authority from offsetting collections, discretionary:			
1700 Collected .....	1		
1900 Budget authority (total) .....	1,873	1,886	1,863
1930 Total budgetary resources available .....	1,997	1,951	1,909
Memorandum (non-add) entries:			
1941 Unexpired unobligated balance, end of year .....	65	46	46
<b>Change in obligated balance:</b>			
Unpaid obligations:			
3000 Unpaid obligations, brought forward, Oct 1 .....	1,571	1,528	1,568
3010 New obligations, unexpired accounts .....	1,932	1,905	1,863
3020 Outlays (gross) .....	-1,888	-1,865	-1,920
3040 Recoveries of prior year unpaid obligations, unexpired .....	-87		
3050 Unpaid obligations, end of year .....	1,528	1,568	1,511
Memorandum (non-add) entries:			
3100 Obligated balance, start of year .....	1,571	1,528	1,568
3200 Obligated balance, end of year .....	1,528	1,568	1,511
<b>Budget authority and outlays, net:</b>			
Discretionary:			
4000 Budget authority, gross .....	1,873	1,886	1,863
Outlays, gross:			
4010 Outlays from new discretionary authority .....	867	943	932

DEFENSE NUCLEAR NONPROLIFERATION—Continued  
Program and Financing—Continued

Identification code 089–0309–0–1–053		2017 actual	2018 est.	2019 est.
4011	Outlays from discretionary balances .....	1,021	922	988
4020	Outlays, gross (total) .....	1,888	1,865	1,920
Offsets against gross budget authority and outlays:				
Offsetting collections (collected) from:				
4034	Offsetting governmental collections .....	–1		
4180	Budget authority, net (total) .....	1,872	1,886	1,863
4190	Outlays, net (total) .....	1,887	1,865	1,920

NNSA helps keep America safe by preventing adversaries from acquiring nuclear weapons or weapons-usable materials, technology, and expertise; countering efforts to acquire such weapons or materials; and responding to nuclear or radiological accidents and incidents domestically and abroad. NNSA's nonproliferation and counterterrorism activities extend the nation's defenses far beyond America's borders. NNSA leverages the knowledge that underpins the stockpile stewardship program for a range of nonproliferation missions, from assessing foreign weapons programs and potential terrorist devices to managing the proliferation risks posed by civil nuclear applications. By limiting the number of nuclear-capable states and preventing terrorist access to materials and technology that can threaten the United States and its allies, NNSA broadly enhances global stability and constrains the range of potential threats facing the Nation.

The Defense Nuclear Nonproliferation (DNN) and the Nuclear Counterterrorism and Incident Response (NCTIR) programs have a primary role in the U.S. approach to reducing nuclear security risks. These two programs provide policy and technical leadership to prevent or limit the spread of materials, technology, and expertise related to weapons of mass destruction (WMD); develop technologies that detect the proliferation of WMD worldwide; secure or eliminate inventories of nuclear weapons-related materials and infrastructure; and ensure a technically trained response both domestically and worldwide to nuclear and radiological incidents. DNN's efforts reduce the danger that hostile nations or terrorist groups may acquire nuclear devices, radiological dispersal devices, weapons-usable material, nuclear and dual-use commodities and technology, or nuclear-related expertise. The National Security Strategy and the Nuclear Posture Review reinforce the important work of NNSA's nonproliferation, counterterrorism, and counterproliferation programs, including measures to secure, eliminate, and prevent the spread of WMD and related materials and maintain technical forensics and attribution capabilities to identify the source of nuclear materials used in a nuclear device.

These activities are carried out within the context of a dynamic global security environment characterized by the persistent threat of state or non-state actors seeking to obtain nuclear and radiological materials, state actors potentially undermining arms control agreements and nonproliferation regimes, an increase in risk in the availability of nuclear and radiological materials as a result of the global expansion of nuclear power and fuel cycle technology; increased opportunities for illicit nuclear material trafficking and sophisticated procurement networks; and technology advancements (including cyber-related tools) that may shorten nuclear weapon development timelines and complicate nuclear safeguards and security missions.

The major elements of the appropriation account include the following:

**Material Management and Minimization ( $M^3$ ).**— $M^3$  programs minimize and, when possible, eliminate weapons-usable nuclear material around the world to achieve permanent threat reduction.

**Global Material Security (GMS).**—GMS programs prevent terrorists and other actors from obtaining nuclear and radiological material to use in an improvised nuclear device or a radiological dispersal device by working with partner countries to improve the security of vulnerable materials and facilities and to improve partners' capacities to deter, detect, and investigate illicit trafficking of these materials. GMS works extensively with and

through multilateral partners such as the International Atomic Energy Agency and Interpol.

**Nonproliferation and Arms Control (NPAC).**—NPAC supports activities to prevent the proliferation of WMD by state and non-state actors. NPAC develops and implements programs and strategies to strengthen international nuclear safeguards; control the spread of nuclear and dual-use material, equipment, technology, and expertise; verify nuclear reductions and compliance with nonproliferation and arms control treaties and agreements; and address enduring and emerging nonproliferation and arms control challenges and opportunities.

**Defense Nuclear Nonproliferation Research and Development (DNN R&D).**—DNN R&D drives the innovation of unilateral and multi-lateral technical capabilities to detect nuclear detonations; foreign nuclear weapons programs' activities; and the presence, movement, or diversion of special nuclear materials. To meet national and Departmental nuclear security requirements, DNN R&D leverages the unique facilities and scientific skills of the Department of Energy, academia, and industry to perform research, conduct technology demonstrations, develop prototypes, and produce and deliver sensors for integration into operational systems.

**Nonproliferation Construction.**—The budget proposes to terminate the Mixed Oxide Fuel Fabrication project and transition to the dilute and dispose strategy to fulfill the United States' commitment to dispose of 34 metric tons of surplus U.S. weapon-grade plutonium.

**Nuclear Counterterrorism and Incident Response (NCTIR).**—The NCTIR Program executes the DOE/NNSA's Comprehensive Emergency Management System program that administers implementation and support of emergency management for all DOE/NNSA offices and sites, and manages the DOE/NNSA Consolidated Emergency Operations Center, Emergency Communications Network, Emergency Management Policy, Training, National Exercises Program, and Continuity Program activities. NCTIR also applies the unique technical expertise from NNSA's nuclear security enterprise to prepare for, prevent, mitigate, and respond to a nuclear or radiological incident domestically or abroad, providing technical advice to interagency and international partners and state and local organizations in support of nuclear counterproliferation, nuclear counterterrorism, nuclear incident response, and nuclear forensics.

## Object Classification (in millions of dollars)

Identification code 089–0309–0–1–053		2017 actual	2018 est.	2019 est.
Direct obligations:				
25.1	Advisory and assistance services .....	124	121	119
25.2	Other services from non-Federal sources .....	139	136	133
25.4	Operation and maintenance of facilities .....	1,278	1,266	1,237
25.5	Research and development contracts .....	1	1	1
31.0	Equipment .....	42	41	40
32.0	Land and structures .....	331	323	317
41.0	Grants, subsidies, and contributions .....	17	17	16
99.0	Direct obligations .....	1,932	1,905	1,863
99.9	Total new obligations, unexpired accounts .....	1,932	1,905	1,863

## CERRO GRANDE FIRE ACTIVITIES

## Program and Financing (in millions of dollars)

Identification code 089–0312–0–1–053		2017 actual	2018 est.	2019 est.
Budgetary resources:				
Unobligated balance:				
1000	Unobligated balance brought forward, Oct 1 .....	3		
1029	Other balances withdrawn to Treasury .....	–3		
4180	Budget authority, net (total) .....			
4190	Outlays, net (total) .....			

**Cerro Grande Fire Activities.**—Emergency funding was provided in 2000 and 2001 for restoration activities at the Los Alamos National

Laboratory in New Mexico after the Cerro Grande Fire in May 2000. It is an inactive account.

## ENVIRONMENTAL AND OTHER DEFENSE ACTIVITIES

### Federal Funds

#### DEFENSE ENVIRONMENTAL CLEANUP

For Department of Energy expenses, including the purchase, construction, and acquisition of plant and capital equipment and other expenses necessary for atomic energy defense environmental cleanup activities in carrying out the purposes of the Department of Energy Organization Act (42 U.S.C. 7101 et seq.), including the acquisition or condemnation of any real property or any facility or for plant or facility acquisition, construction, or expansion, \$5,630,217,000, to remain available until expended: Provided, That of such amount, \$300,000,000 shall be available until September 30, 2020, for program direction: Provided further, That of such amount, \$150,000,000 shall be available for the deactivation and decommissioning of high-risk excess facilities that are not in the current project inventory of the Environmental Management program.

Note.—A full-year 2018 appropriation for this account was not enacted at the time the budget was prepared; therefore, the budget assumes this account is operating under the Continuing Appropriations Act, 2018 (Division D of P.L. 115–56, as amended). The amounts included for 2018 reflect the annualized level provided by the continuing resolution.

#### Program and Financing (in millions of dollars)

Identification code 089–0251–0–1–053	2017 actual	2018 est.	2019 est.
<b>Obligations by program activity:</b>			
0001 Closure Sites .....	8	9	5
0002 Hanford Site .....	852	834	658
0003 River Protection – Tank Farm .....	736	729	678
0004 River Protection – Waste Treatment Plant .....	754	688	705
0005 River Protection – LAWPS .....	73	73	56
0006 Idaho .....	382	379	349
0007 NNSA Sites .....	262	260	256
0008 Oak Ridge .....	256	261	226
0009 Savannah River .....	1,228	1,225	1,473
0010 Waste Isolation Pilot Plant .....	319	291	397
0011 Program Support .....	14	15	13
0012 Safeguards & Security .....	262	260	324
0013 Technology Development & Demonstration .....	25	25	25
0014 Program Direction .....	282	288	300
0015 Excess Facilities .....	.....	.....	150
0020 SPRU .....	9	4	15
0021 UED&D Fund Contribution .....	563	559	.....
0022 Economic Assistance to the State of New Mexico .....	.....	27	.....
0900 Total new obligations, unexpired accounts .....	6,025	5,927	5,630
<b>Budgetary resources:</b>			
Unobligated balance:			
1000 Unobligated balance brought forward, Oct 1 .....	17	35	47
1021 Recoveries of prior year unpaid obligations .....	14	12	12
1033 Recoveries of prior year paid obligations .....	63	.....	.....
1050 Unobligated balance (total) .....	94	47	59
Budget authority:			
Appropriations, discretionary:			
1100 Appropriation .....	5,968	5,927	5,630
1120 Appropriations transferred to other accts [089–0222] .....	–1	.....	.....
1131 Unobligated balance of appropriations permanently reduced .....	–1	.....	.....
1160 Appropriation, discretionary (total) .....	5,966	5,927	5,630
1930 Total budgetary resources available .....	6,060	5,974	5,689
Memorandum (non-add) entries:			
1941 Unexpired unobligated balance, end of year .....	35	47	59
<b>Change in obligated balance:</b>			
Unpaid obligations:			
3000 Unpaid obligations, brought forward, Oct 1 .....	2,145	2,218	1,958
3010 New obligations, unexpired accounts .....	6,025	5,927	5,630
3020 Outlays (gross) .....	–5,936	–6,175	–5,678
3040 Recoveries of prior year unpaid obligations, unexpired .....	–14	–12	–12
3041 Recoveries of prior year unpaid obligations, expired .....	–2	.....	.....
3050 Unpaid obligations, end of year .....	2,218	1,958	1,898
Memorandum (non-add) entries:			
3100 Obligated balance, start of year .....	2,145	2,218	1,958
3200 Obligated balance, end of year .....	2,218	1,958	1,898

#### Budget authority and outlays, net:

Discretionary:			
4000 Budget authority, gross .....	5,966	5,927	5,630
Outlays, gross:			
4010 Outlays from new discretionary authority .....	4,132	4,317	3,941
4011 Outlays from discretionary balances .....	1,804	1,858	1,737
4020 Outlays, gross (total) .....	5,936	6,175	5,678
Offsets against gross budget authority and outlays:			
Offsetting collections (collected) from:			
4033 Non-Federal sources .....	–63	.....	.....
4040 Offsets against gross budget authority and outlays (total) ....	–63	.....	.....
Additional offsets against gross budget authority only:			
4053 Recoveries of prior year paid obligations, unexpired accounts .....	63	.....	.....
4060 Additional offsets against budget authority only (total) .....	63	.....	.....
4070 Budget authority, net (discretionary) .....	5,966	5,927	5,630
4080 Outlays, net (discretionary) .....	5,873	6,175	5,678
4180 Budget authority, net (total) .....	5,966	5,927	5,630
4190 Outlays, net (total) .....	5,873	6,175	5,678

The Defense Environmental Cleanup program is responsible for protecting human health and the environment by identifying and reducing risks, as well as managing waste and facilities, at sites where the Department carried out defense-related nuclear research and production activities. Those activities resulted in radioactive, hazardous, and mixed -waste contamination requiring remediation, stabilization, decontamination and decommissioning, or some other type of cleanup action. The budget displays the cleanup program by site and activity.

**Closure Sites.**—Funds post-closure administration costs after the physical completion of cleanup, including costs for contract closeout and litigation support.

**Hanford Site.**—Funds cleanup and environmental restoration to protect the Columbia River and surrounding communities. The Hanford site cleanup is managed by two Environmental Management (EM) site offices: the Richland Operations Office and the Office of River Protection.

The Richland Office is responsible for cleanup activities on most of the geographic area making up the Hanford site. The primary cleanup focus is decontamination and decommissioning legacy facilities and characterizing and treating contaminated groundwater.

The Office of River Protection is responsible for the safe storage, retrieval, treatment, immobilization, and disposal of 56 million gallons of radioactive waste stored in 177 underground tanks. It is also responsible for related operation, maintenance, engineering, and construction activities, including those connected to the Waste Treatment and Immobilization Plant being built to solidify the liquid tank waste in a glass form that can be safely stored.

**Idaho.**—Funds retrieval, treatment, and disposition of nuclear and hazardous wastes and spent nuclear fuel, and legacy site cleanup activities.

**NNSA Sites.**—Funds the safe and efficient cleanup of the environmental legacy of past operations at National Nuclear Security Administration (NNSA) sites including Nevada National Security Site, Sandia National Laboratories, Lawrence Livermore National Laboratory, Los Alamos National Laboratory and the Separations Process Research Unit. The cleanup strategy follows a risk-informed approach that focuses first on those soil and groundwater contaminant plumes and sources that are the greatest contributors to risk. The overall goal is first to ensure that risks to the public and workers are controlled, then to clean up soil and groundwater using a risk-informed methodology. NNSA is responsible for long-term stewardship of its sites after physical cleanup is completed. Los Alamos legacy cleanup is managed by the EM Los Alamos field office.

**Oak Ridge.**—Funds defense-related cleanup of the three facilities that make up the Oak Ridge Reservation: the East Tennessee Technology Park, the Oak Ridge National Laboratory, and the Y-12 Plant. The overall cleanup strategy is based on surface water considerations, encompassing five distinct watersheds that feed the adjacent Clinch River.

**Savannah River Site.**—Funds the safe stabilization, treatment, and disposition of legacy nuclear materials, spent nuclear fuel, and waste at the Sa-

## DEFENSE ENVIRONMENTAL CLEANUP—Continued

vannah River site. Key activities include operating the Defense Waste Processing Facility, which is solidifying the high activity liquid waste contained in underground storage tanks, and the testing and cold commissioning of the Salt Waste Processing Facility, which will separate various tank waste components and treat and dispose the low activity liquid waste stream.

**Waste Isolation Pilot Plant.**—Funds the world's first permitted deep geologic repository for the permanent disposal of radioactive waste, and the Nation's only disposal site for defense-generated transuranic waste. The Waste Isolation Pilot Plant, managed by the Carlsbad Field Office, is an operating facility, supporting the disposal of transuranic waste from waste generator and storage sites across the DOE complex. The Waste Isolation Pilot Plant is crucial to the Department of Energy (DOE) completing its cleanup and closure mission.

**Program Direction.**—Funds the Federal workforce responsible for the overall direction and administrative support of the EM program, including both Headquarters and field personnel.

**Program Support.**—Funds management and direction for various cross-cutting EM and DOE initiatives, intergovernmental activities, and analyses and integration activities across DOE in a consistent, responsible, and efficient manner.

**Safeguards and Security.**—Funds activities to protect against unauthorized access, theft, diversion, loss of custody or destruction of DOE assets, and hostile acts that could cause adverse impacts to fundamental national security or the health and safety of DOE and contractor employees, the public or the environment.

**Innovation and Technology Development (formerly Technology Development and Deployment).**—Funds projects managed through Headquarters to address the immediate, near- and long-term technology needs identified by the EM sites, enabling them to accelerate their cleanup schedules, treat orphaned wastes, improve worker safety, and provide technical foundations for the sites' cleanup decisions. These projects focus on maturing and deploying the technologies necessary to accelerate tank waste processing, treatment, and waste loading.

**Excess Facilities.**—Funds the deactivation and decommissioning (D&D) of excess facilities to be transferred to the Environmental Management program. This targeted effort supports accelerated D&D activities focused on specific high-risk facilities at the Y-12 National Security Complex and the Lawrence Livermore National Laboratory to achieve substantial risk reduction within four years as proposed in the 2018 Budget.

## Object Classification (in millions of dollars)

Identification code 089-0251-0-1-053	2017 actual	2018 est.	2019 est.
Direct obligations:			
Personnel compensation:			
11.1 Full-time permanent .....	161	158	150
11.3 Other than full-time permanent .....	2	2	2
11.5 Other personnel compensation .....	3	3	3
11.9 Total personnel compensation .....	166	163	155
12.1 Civilian personnel benefits .....	53	52	50
21.0 Travel and transportation of persons .....	5	5	5
23.1 Rental payments to GSA .....	13	13	12
23.2 Rental payments to others .....	1	1	1
23.3 Communications, utilities, and miscellaneous charges .....	12	12	11
25.1 Advisory and assistance services .....	786	219	208
25.2 Other services from non-Federal sources .....	424	417	396
25.3 Other goods and services from Federal sources .....	53	52	50
25.4 Operation and maintenance of facilities .....	3,421	3,919	3,723
25.5 Research and development contracts .....	7	7	7
25.6 Medical care .....	17	17	15
26.0 Supplies and materials .....	1	1	1
31.0 Equipment .....	67	66	63
32.0 Land and structures .....	917	902	857
41.0 Grants, subsidies, and contributions .....	82	81	76
99.9 Total new obligations, unexpired accounts .....	6,025	5,927	5,630

## Employment Summary

Identification code 089-0251-0-1-053	2017 actual	2018 est.	2019 est.
1001 Direct civilian full-time equivalent employment .....	1,359	1,400	1,400

## OTHER DEFENSE ACTIVITIES

*For Department of Energy expenses, including the purchase, construction, and acquisition of plant and capital equipment and other expenses, necessary for atomic energy defense, other defense activities, and classified activities, in carrying out the purposes of the Department of Energy Organization Act (42 U.S.C. 7101 et seq.), including the acquisition or condemnation of any real property or any facility or for plant or facility acquisition, construction, or expansion, \$853,300,000, to remain available until expended: Provided, That of such amount, \$299,085,000 shall be available until September 30, 2020, for program direction.*

Note.—A full-year 2018 appropriation for this account was not enacted at the time the budget was prepared; therefore, the budget assumes this account is operating under the Continuing Appropriations Act, 2018 (Division D of P.L. 115-56, as amended). The amounts included for 2018 reflect the annualized level provided by the continuing resolution.

## Program and Financing (in millions of dollars)

Identification code 089-0243-0-1-999	2017 actual	2018 est.	2019 est.
<b>Obligations by program activity:</b>			
0008 Environment, Health, Safety, and Security Mission Support .....	193	199	206
0009 Independent Enterprise Assessments .....	75	78	77
0015 Specialized security activities .....	237	242	254
0020 Legacy management .....	155	155	159
0030 Defense related administrative support .....	124	125	154
0060 Hearings and Appeals .....	4	4	6
0100 Subtotal, Direct program activities .....	788	803	856
0799 Total direct obligations .....	788	803	856
0810 Other Defense Activities (Reimbursable) .....	1,571	1,512	1,497
0819 Reimbursable program activities, subtotal .....	1,571	1,512	1,497
0900 Total new obligations, unexpired accounts .....	2,359	2,315	2,353
<b>Budgetary resources:</b>			
Unobligated balance:			
1000 Unobligated balance brought forward, Oct 1 .....	29	35	2
1021 Recoveries of prior year unpaid obligations .....	26		
1050 Unobligated balance (total) .....	55	35	2
Budget authority:			
Appropriations, discretionary:			
1100 Appropriation .....	784	779	853
Spending authority from offsetting collections, discretionary:			
1700 Collected .....	1,503	1,503	1,503
1701 Change in uncollected payments, Federal sources .....	52		
1750 Spending auth from offsetting collections, disc (total) .....	1,555	1,503	1,503
1900 Budget authority (total) .....	2,339	2,282	2,356
1930 Total budgetary resources available .....	2,394	2,317	2,358
Memorandum (non-add) entries:			
1941 Unexpired unobligated balance, end of year .....	35	2	5
<b>Change in obligated balance:</b>			
Unpaid obligations:			
3000 Unpaid obligations, brought forward, Oct 1 .....	1,372	1,483	1,532
3010 New obligations, unexpired accounts .....	2,359	2,315	2,353
3020 Outlays (gross) .....	-2,221	-2,266	-2,329
3040 Recoveries of prior year unpaid obligations, unexpired .....	-26		
3041 Recoveries of prior year unpaid obligations, expired .....	-1		
3050 Unpaid obligations, end of year .....	1,483	1,532	1,556
Uncollected payments:			
3060 Uncollected pymts, Fed sources, brought forward, Oct 1 .....	-1,115	-1,167	-1,167
3070 Change in uncollected pymts, Fed sources, unexpired .....	-52		
3090 Uncollected pymts, Fed sources, end of year .....	-1,167	-1,167	-1,167
Memorandum (non-add) entries:			
3100 Obligated balance, start of year .....	257	316	365
3200 Obligated balance, end of year .....	316	365	389
<b>Budget authority and outlays, net:</b>			
Discretionary:			
4000 Budget authority, gross .....	2,339	2,282	2,356
Outlays, gross:			
4010 Outlays from new discretionary authority .....	1,066	1,486	1,241

4011	Outlays from discretionary balances .....	1,155	780	1,088
4020	Outlays, gross (total) .....	2,221	2,266	2,329
	Offsets against gross budget authority and outlays:			
	Offsetting collections (collected) from:			
4030	Federal sources .....	-1,414	-1,414	-1,414
4033	Non-Federal sources .....	-89	-89	-89
4040	Offsets against gross budget authority and outlays (total) ....	-1,503	-1,503	-1,503
	Additional offsets against gross budget authority only:			
4050	Change in uncollected pymts, Fed sources, unexpired .....	-52		
4070	Budget authority, net (discretionary) .....	784	779	853
4080	Outlays, net (discretionary) .....	718	763	826
4180	Budget authority, net (total) .....	784	779	853
4190	Outlays, net (total) .....	718	763	826

**Environment, Health, Safety and Security Mission Support.**—The program supports the Department's health, safety, environment, and security programs to enhance productivity while maintaining the highest standards of safe operation, protection of national assets, and environmental sustainability. As the Department's "environment, health, safety and security advocate," the program works closely with DOE line managers who are ultimately responsible for ensuring that the Department's work is managed and performed in a manner that protects workers and the public as well as the Department's material and information assets. The program functions include: policy and guidance development and technical assistance; analysis of health, safety, environment, and security performance; nuclear safety; domestic and international health studies; medical screening programs for former workers; Energy Employee Occupational Illness Compensation Program Act support; quality assurance programs; interface with the Defense Nuclear Facilities Safety Board; national security information programs; and security for the Department's facilities and personnel in the National Capital Area.

**Enterprise Assessments.**—The program supports the Department's independent assessments of security, cybersecurity, emergency management, and environment, safety and health performance; enforcement of worker safety and health, nuclear safety; and classified information security regulations; and implementation of security and safety professional development and training programs.

**Specialized Security Activities.**—The program supports national security related analyses requiring highly specialized skills and capabilities.

**Legacy Management.**—The program supports long-term stewardship activities (e.g., groundwater monitoring, disposal cell maintenance, records management, and management of natural resources) at sites where active remediation has been completed. In addition, Legacy Management funds the pensions and/or post-retirement benefits for former contractor employees.

**Hearings and Appeals.**—The Office of Hearings and Appeals adjudicates personnel security cases, as well as whistleblower reprisal complaints filed by DOE contractor employees. The office is the appeal authority in various other areas, including Freedom of Information Act and Privacy Act appeals. In addition, the office decides requests for exception from DOE orders, rules, regulations, and is responsible for the DOE's alternative dispute resolution function.

**Defense-Related Administrative Support.**—Obligations are included for defense-related administrative support that serves to offset costs that are attributable to the defense-related programs within the Department of Energy that utilize the department-wide services funded by the Departmental Administration account. These include accounting and information technology department-wide services.

#### Object Classification (in millions of dollars)

Identification code 089-0243-0-1-999	2017 actual	2018 est.	2019 est.
Direct obligations:			
Personnel compensation:			
11.1 Full-time permanent .....	105	125	125
11.3 Other than full-time permanent .....	2	2	2
11.5 Other personnel compensation .....	3	3	3
11.8 Special personal services payments .....	1		

11.9 Total personnel compensation .....	111	130	130
12.1 Civilian personnel benefits .....	34	41	40
13.0 Benefits for former personnel .....	3	3	3
21.0 Travel and transportation of persons .....	5	5	5
23.1 Rental payments to GSA .....	2	2	2
23.2 Rental payments to others .....	4	4	4
23.3 Communications, utilities, and miscellaneous charges .....	8	8	8
25.1 Advisory and assistance services .....	256	245	278
25.2 Other services from non-Federal sources .....	90	90	90
25.3 Other goods and services from Federal sources .....	41	41	52
25.4 Operation and maintenance of facilities .....	161	161	174
25.7 Operation and maintenance of equipment .....	3	3	3
26.0 Supplies and materials .....	1	1	1
31.0 Equipment .....	29	29	26
41.0 Grants, subsidies, and contributions .....	40	40	40
99.0 Direct obligations .....	788	803	856
99.0 Reimbursable obligations .....	1,571	1,512	1,497
99.9 Total new obligations, unexpired accounts .....	2,359	2,315	2,353

#### Employment Summary

Identification code 089-0243-0-1-999	2017 actual	2018 est.	2019 est.
1001 Direct civilian full-time equivalent employment .....	826	982	980

#### DEFENSE NUCLEAR WASTE DISPOSAL

For nuclear waste disposal activities to carry out the purposes of Public Law 97-425, as amended, including the acquisition of real property or facility construction or expansion, and interim storage activities, \$30,000,000, to remain available until expended.

#### Program and Financing (in millions of dollars)

Identification code 089-0244-0-1-053	2017 actual	2018 est.	2019 est.
<b>Obligations by program activity:</b>			
0001 Defense Nuclear Waste Disposal (Direct) .....	6	1	30
0900 Total new obligations (object class 25.1) .....	6	1	30
<b>Budgetary resources:</b>			
Unobligated balance:			
1000 Unobligated balance brought forward, Oct 1 .....	6	1	
1021 Recoveries of prior year unpaid obligations .....	1		
1050 Unobligated balance (total) .....	7	1	
Budget authority:			
Appropriations, discretionary:			
1100 Appropriation .....			30
1930 Total budgetary resources available .....	7	1	30
Memorandum (non-add) entries:			
1941 Unexpired unobligated balance, end of year .....	1		
<b>Change in obligated balance:</b>			
Unpaid obligations:			
3000 Unpaid obligations, brought forward, Oct 1 .....	8	12	7
3010 New obligations, unexpired accounts .....	6	1	30
3020 Outlays (gross) .....	-1	-6	-19
3040 Recoveries of prior year unpaid obligations, unexpired .....	-1		
3050 Unpaid obligations, end of year .....	12	7	18
Memorandum (non-add) entries:			
3100 Obligated balance, start of year .....	8	12	7
3200 Obligated balance, end of year .....	12	7	18
<b>Budget authority and outlays, net:</b>			
Discretionary:			
4000 Budget authority, gross .....			30
Outlays, gross:			
4010 Outlays from new discretionary authority .....			12
4011 Outlays from discretionary balances .....	1	6	7
4020 Outlays, gross (total) .....	1	6	19
4180 Budget authority, net (total) .....			30
4190 Outlays, net (total) .....	1	6	19

The Defense Nuclear Waste Disposal appropriation was established by the Congress as part of the 1993 Energy and Water Development Appropriation (P.L. 102-377), in lieu of payment from the Department of Energy

## DEFENSE NUCLEAR WASTE DISPOSAL—Continued

(DOE) into the Nuclear Waste Fund for activities related to the disposal of defense high-level waste from DOE's atomic energy defense activities.

## ENERGY PROGRAMS

## Federal Funds

## SCIENCE

For Department of Energy expenses including the purchase, construction, and acquisition of plant and capital equipment, and other expenses necessary for science activities in carrying out the purposes of the Department of Energy Organization Act (42 U.S.C. 7101 et seq.), including the acquisition or condemnation of any real property or facility or for plant or facility acquisition, construction, or expansion, and purchase of not more than 16 passenger motor vehicles for replacement only, including one bus, \$4,177,810,000, to remain available until expended: Provided, That of such amount, \$170,000,000 shall be available until September 30, 2020, for program direction.

Note.—A full-year 2018 appropriation for this account was not enacted at the time the budget was prepared; therefore, the budget assumes this account is operating under the Continuing Appropriations Act, 2018 (Division D of P.L. 115–56, as amended). The amounts included for 2018 reflect the annualized level provided by the continuing resolution.

## Program and Financing (in millions of dollars)

Identification code 089–0222–0–1–251	2017 actual	2018 est.	2019 est.
<b>Obligations by program activity:</b>			
0001 Basic Energy Sciences .....	1,816	1,859	1,408
0002 Advanced Scientific Computing Research .....	633	643	820
0003 Biological and Environmental Research .....	591	608	284
0004 High Energy Physics .....	803	819	630
0005 Nuclear Physics .....	605	618	478
0006 Fusion Energy Sciences .....	369	377	172
0007 Science Laboratories Infrastructure .....	130	129	96
0008 Science Program Direction .....	178	181	170
0009 Workforce Development for Teachers and Scientists .....	20	19	14
0010 Safeguards and Security .....	103	102	106
0011 Small Business Innovation Research .....	217		
0012 Small Business Technology Transfer .....	30		
0799 Total direct obligations .....	5,495	5,355	4,178
0801 Science (Reimbursable) .....	577	520	520
0900 Total new obligations, unexpired accounts .....	6,072	5,875	4,698
<b>Budgetary resources:</b>			
Unobligated balance:			
1000 Unobligated balance brought forward, Oct 1 .....	12	20	19
1011 Unobligated balance transfer from other acct [089–0321] ....	2		
1021 Recoveries of prior year unpaid obligations .....	44		
1050 Unobligated balance (total) .....	58	20	19
Budget authority:			
Appropriations, discretionary:			
1100 Appropriation .....	5,392	5,355	4,178
1121 Appropriations transferred from other acct [089–0319] ....	16		
1121 Appropriations transferred from other acct [089–0309] ....	8		
1121 Appropriations transferred from other acct [089–0213] ....	15		
1121 Appropriations transferred from other acct [089–0251] ....	1		
1121 Appropriations transferred from other acct [089–0318] ....	6		
1121 Appropriations transferred from other acct [089–0321] ....	43		
1131 Unobligated balance of appropriations permanently reduced .....	–1	–1	
1160 Appropriation, discretionary (total) .....	5,480	5,354	4,178
Spending authority from offsetting collections, discretionary:			
1700 Collected .....	517	520	520
1701 Change in uncollected payments, Federal sources .....	37		
1750 Spending auth from offsetting collections, disc (total) .....	554	520	520
1900 Budget authority (total) .....	6,034	5,874	4,698
1930 Total budgetary resources available .....	6,092	5,894	4,717
Memorandum (non-add) entries:			
1941 Unexpired unobligated balance, end of year .....	20	19	19
<b>Change in obligated balance:</b>			
Unpaid obligations:			
3000 Unpaid obligations, brought forward, Oct 1 .....	4,730	5,080	4,658
3010 New obligations, unexpired accounts .....	6,072	5,875	4,698
3020 Outlays (gross) .....	–5,678	–6,297	–5,518
3040 Recoveries of prior year unpaid obligations, unexpired .....	–44		

3050 Unpaid obligations, end of year .....	5,080	4,658	3,838
Uncollected payments:			
3060 Uncollected pymts, Fed sources, brought forward, Oct 1 .....	–405	–442	–442
3070 Change in uncollected pymts, Fed sources, unexpired .....	–37		
3090 Uncollected pymts, Fed sources, end of year .....	–442	–442	–442
Memorandum (non-add) entries:			
3100 Obligated balance, start of year .....	4,325	4,638	4,216
3200 Obligated balance, end of year .....	4,638	4,216	3,396

## Budget authority and outlays, net:

Discretionary:			
4000 Budget authority, gross .....	6,034	5,874	4,698
Outlays, gross:			
4010 Outlays from new discretionary authority .....	2,002	2,929	2,400
4011 Outlays from discretionary balances .....	3,676	3,368	3,118
4020 Outlays, gross (total) .....	5,678	6,297	5,518
Offsets against gross budget authority and outlays:			
Offsetting collections (collected) from:			
4030 Federal sources .....	–324	–300	–300
4033 Non-Federal sources .....	–193	–220	–220
4040 Offsets against gross budget authority and outlays (total) ....	–517	–520	–520
Additional offsets against gross budget authority only:			
4050 Change in uncollected pymts, Fed sources, unexpired .....	–37		
4070 Budget authority, net (discretionary) .....	5,480	5,354	4,178
4080 Outlays, net (discretionary) .....	5,161	5,777	4,998
4180 Budget authority, net (total) .....	5,480	5,354	4,178
4190 Outlays, net (total) .....	5,161	5,777	4,998

**Advanced Scientific Computing Research.**—The Advanced Scientific Computing Research (ASCR) program supports research in applied mathematics and computer science; delivers the most advanced computational scientific applications in partnership with disciplinary science; advances computing and networking capabilities; and develops future generations of computing hardware and tools for science, in partnership with the research community and U.S. industry. The strategy to accomplish this has two thrusts: developing and maintaining world-class computing and network facilities for science; and advancing research in applied mathematics, computer science and advanced networking. The program supports the development, maintenance, and operation of large high-performance computing and network facilities, including the Leadership Computing Facilities at Oak Ridge and Argonne National Laboratories, the National Energy Research Scientific Computing Facility at Lawrence Berkeley National Laboratory, and the Energy Sciences Network.

Maximizing the benefits of U.S. leadership in computing in the coming decades will require an effective national response to increasing demands for computing capabilities and performance, emerging technological challenges and opportunities, and competition with other nations. The DOE will sustain and enhance its support for high-performance computing (HPC) research, development, and deployment as part of the Federal strategy in partnership with the Department of Defense (DOD) and the National Science Foundation (NSF).

Within the context of this coordinated Federal strategy, the DOE Office of Science (SC) and the DOE National Nuclear Security Administration (NNSA) are overseeing the Department's Exascale Computing Initiative (ECI), which began in 2016. The ECI focuses on delivering advanced simulation through an exascale-capable computing program, with an emphasis on sustained performance on science, national security mission applications, and increased convergence between exascale and large-data analytic computing. To meet ECI goals, research and development (R&D) will be accelerated to overcome key exascale challenges in parallelism, energy efficiency, and reliability, leading to deployment of exascale systems in the 2021 timeframe. Acceleration or advancement is defined as a fifty-fold increase in sustained performance over today's computing capabilities, enabling applications to address next-generation science, engineering, and data problems.

**Basic Energy Sciences.**—The Basic Energy Sciences (BES) program supports fundamental research to understand, predict, and ultimately control matter and energy at the electronic, atomic, and molecular levels in order to provide the foundations for new energy technologies and to support



DOE missions in energy, environment, and national security. Key to exploiting such discoveries is the ability to create new materials using sophisticated synthesis and processing techniques, precisely define the atomic arrangements in matter, and control physical and chemical transformations. The energy systems of the future will revolve around materials and chemical changes that convert energy from one form to another.

The research disciplines that BES supports—condensed matter and materials physics, chemistry, geosciences, and aspects of biosciences—are those that discover new materials and design new chemical processes that touch virtually every important aspect of energy resources, production, conversion, transmission, storage, efficiency, and waste mitigation. BES research provides a knowledge base to help understand, predict, and ultimately control the natural world and helps build the foundation for achieving a secure and sustainable energy future. BES also supports world-class, open-access scientific user facilities consisting of a complementary set of intense x-ray sources, neutron sources, and research centers for nanoscale science. BES facilities probe materials with ultrahigh spatial, temporal, and energy resolutions to investigate the critical functions of matter—transport, reactivity, fields, excitations, and motion—and answer some of the most challenging grand science questions. BES-supported activities are entering a new era in which materials can be built with atom-by-atom precision and computational models can predict the behavior of materials before they exist.

*Biological and Environmental Research.*—The Biological and Environmental Research (BER) program supports fundamental research and provides scientific user facilities to achieve a predictive understanding of complex biological, earth, and environmental systems for energy and infrastructure resilience and sustainability.

The program seeks to understand the biological, biogeochemical, and physical principles needed to predict a continuum of processes from the molecular and genomics-controlled smallest scales to environmental and ecological processes. Starting with the genetic potential encoded by organisms' genomes, BER Biological System Science research approaches include genome sequencing, proteomics, metabolomics, structural biology, high-resolution imaging and characterization, and integration of information into computational models that can be iteratively tested and validated. This can enable more confident redesign of microbes and plants for sustainable biofuels production, improved carbon storage, and controlled biological transformation of materials such as nutrients and metals in the environment. BER Earth and Environmental Systems Sciences research advances the fundamental scientific analysis and modeling of the sensitivity and uncertainty of earth system predictions to atmospheric, cryospheric, oceanic, and biogeochemical processes.

*Fusion Energy Sciences.*—The Fusion Energy Sciences (FES) program mission is to expand the fundamental understanding of matter at very high temperatures and densities and to build the scientific foundation needed to develop a fusion energy source. This is accomplished through the study of plasma, the fourth state of matter, and how it interacts with its surroundings. Plasma science is wide-ranging, since 99 percent of the visible universe is composed of plasmas of various types. High temperature fusion plasmas at hundreds of millions of degrees occur in national security applications albeit for very short times. The same fusion plasmas could be exploited in the laboratory in controlled fashion to become the basis for a future clean nuclear power source, which will provide domestic energy independence and security.

The FES program has four elements: (1) Burning Plasma Science: Foundations—The behavior of magnetically confined fusion plasmas is experimentally explored on DIII-D National Fusion Facility and the National Spherical Torus Experiment-Upgrade, which are national Office of Science (SC) user facilities. Fusion theory and simulation activities predict and interpret the complex behavior of plasmas as self-organized systems. Several FES Scientific Discovery through Advanced Computing centers are supported in partnership with ASCR. (2) Burning Plasma Science: Long Pulse—U.S. scientists take advantage of international partnerships

to conduct research on superconducting tokamaks and stellarators with long-duration capabilities. Research is performed to develop novel materials that can withstand the extreme fusion environment. (3) Burning Plasma Science: High Power—The creation of strongly self-heated fusion burning plasmas will allow the discovery and study of new scientific phenomena relevant to fusion as a future energy source. (4) Discovery Plasma Science—Research areas include plasma astrophysics, high-energy density laboratory plasmas, low-temperature plasmas, and innovative measurement techniques.

*High Energy Physics.*—The High Energy Physics (HEP) program mission is to understand how the universe works at its most fundamental level by discovering the elementary constituents of matter and energy, probing the interactions among them, and exploring the basic nature of space and time. The HEP Program offers research opportunities for individual investigators and small-scale collaborations, as well as very large international collaborations. A world-wide program of particle physics research is underway to discover what lies beyond the Standard Model. Five intertwined science drivers of particle physics provide compelling lines of inquiry that show great promise for discovery: use the Higgs boson as a new tool for discovery; pursue the physics associated with neutrino mass; identify the new physics of dark matter; understand cosmic acceleration, dark energy, and inflation; and explore new particles, interactions and physical principles. The program enables scientific discovery through a strategy organized along three frontiers of particle physics: 1) The Energy Frontier, where researchers accelerate particles to the highest energies ever made by humans and collide them to produce and study the fundamental constituents of matter. This requires some of the largest machines ever built; 2) The Intensity Frontier, where researchers use a combination of intense particle beams and highly sensitive detectors to make extremely precise measurements of particle properties, study some of the rarest particle interactions predicted by the Standard Model of particle physics, and search for new physics; and 3) The Cosmic Frontier, where researchers seek to reveal the nature of dark matter and dark energy by using naturally occurring particles to explore new phenomena. The highest-energy particles ever observed have come from cosmic sources, and the ancient light from distant galaxies allows the distribution of dark matter to be mapped and perhaps the nature of dark energy to be unraveled. Investments in Theoretical and Computational Physics, which provides the framework to explain experimental observations and gain a deeper understanding of nature, and Advanced Technology R&D, which fosters fundamental research into particle acceleration and detection techniques and instrumentation, support these three frontiers. Many of the advanced technologies and research tools originally developed for high energy physics have also proven applicable to other sciences, as well as industry, medicine, and national security.

*Nuclear Physics.*—The Nuclear Physics (NP) program mission is to discover, explore, and understand all forms of nuclear matter. Although the fundamental particles that compose nuclear matter—quarks and gluons—are themselves relatively well understood, exactly how they interact and combine to form the different types of matter observed in the universe today and during its evolution remains largely unknown. Nuclear physicists seek to understand not just the familiar forms of matter we see around us, but also exotic forms such as those which existed in the first microseconds after the birth of the cosmos and that exist today inside neutron stars. The NP program addresses three tightly interrelated scientific thrusts: 1) how the strong nuclear force assembles quarks and gluons into protons and neutrons; how novel forms of bulk, strongly interacting matter behave, such as the quark-gluon plasma that formed in the early universe; and 2) the structure of nuclei; how protons and neutrons combine to form atomic nuclei and how these nuclei have arisen during the 13.8 billion years since the birth of the cosmos. NP provides ~95 percent of all nuclear science federal research funding. NP also maintains and operates three national scientific user facilities that accelerate particles to nearly the speed of light, producing short-lived forms of matter for investigation. A fourth, the next generation Facility for Rare Isotope Beams, is being constructed at Michigan

## SCIENCE—Continued

State University (MSU) to provide advanced world-leading capabilities for science, national security applications, and isotopes. Low energy, precision nuclear experiments, many enabled by new quantum sensors, are used to search for a deeper understanding of nuclear interactions. Also within NP, the DOE Isotope Program supports high-priority research on the development of cutting-edge approaches for producing isotopes critical to the nation in basic research and applications, including ground breaking research on the production of alpha emitting isotopes in sufficient quantity to enable clinical trials for cancer therapy. Mission readiness is provided for the production of radioactive and stable isotopes that are in short supply for research and a wide array of applications.

**Science Laboratories Infrastructure (SLI).**—The Science Laboratories Infrastructure (SLI) program supports scientific and technological innovation at the SC laboratories by funding and sustaining mission-ready infrastructure and fostering safe and environmentally responsible operations. The program provides state-of-the-art facilities and infrastructure that are flexible, reliable, and sustainable in support of scientific discovery. The SLI program also funds Payments in Lieu of Taxes to local communities around the Argonne, Brookhaven, and Oak Ridge National Laboratories.

**Safeguards and Security.**—The Safeguards and Security (S&S) program is designed to ensure appropriate security measures are in place to support the SC mission requirement of open scientific research and to protect critical assets within SC laboratories. This is accomplished by providing physical controls that will mitigate possible risks to the laboratories' employees, nuclear and special materials, classified and sensitive information, and facilities. The S&S program also provides funding for cyber security for the laboratories' information technology systems to protect electronic data while enabling the SC mission.

**Workforce Development for Teachers and Scientists.**—The Workforce Development for Teachers and Scientists (WDTS) program mission is to help ensure that DOE has a sustained pipeline of science, technology, engineering, and mathematics (STEM) workers. This is accomplished through support of undergraduate internships, and graduate thesis research at the DOE laboratories; and annual, nationwide, middle- and high-school science competitions culminating in the National Science Bowl in Washington, D.C. These investments help develop the next generation of scientists and engineers to support the DOE mission, administer programs, and conduct research.

**Program Direction.**—Science Program Direction supports a highly skilled Federal workforce to develop and oversee SC investments in research and scientific user facilities. SC investments deliver scientific discoveries and major scientific tools that transform our understanding of nature and advance the energy, economic, and national security of the United States. In addition, SC provides public access to DOE scientific findings to further leverage the Federal science investment and advance the scientific enterprise. SC requires highly skilled scientific and technical program and project managers, as well as experts in areas such as acquisition, finance, legal, construction, and infrastructure management, human resources, and environmental, safety, and health oversight. SC plans, executes, and manages basic science research programs that address critical national needs. Oversight of DOE's basic research portfolio, which includes extramural grants and contracts supporting about 17,000 researchers located at over 300 institutions and the 17 DOE national laboratories, spanning all fifty states and the District of Columbia and 24 scientific user facilities serving nearly 23,000 users per year, as well as supervision of major construction projects, is a Federal responsibility.

## Object Classification (in millions of dollars)

Identification code 089-0222-0-1-251	2017 actual	2018 est.	2019 est.
Direct obligations:			
Personnel compensation:			
11.1 Full-time permanent .....	102	102	92
11.3 Other than full-time permanent .....	2	2	2
11.5 Other personnel compensation .....	2	2	2

11.8 Special personal services payments .....	1	1	1
11.9 Total personnel compensation .....	107	107	97
12.1 Civilian personnel benefits .....	33	33	30
13.0 Benefits for former personnel .....	1	.....	1
21.0 Travel and transportation of persons .....	2	2	2
23.1 Rental payments to GSA .....	1	1	1
23.2 Rental payments to others .....	1	1	1
23.3 Communications, utilities, and miscellaneous charges .....	2	2	2
25.1 Advisory and assistance services .....	21	21	21
25.2 Other services from non-Federal sources .....	55	41	55
25.3 Other goods and services from Federal sources .....	17	31	17
25.4 Operation and maintenance of facilities .....	3,271	3,143	2,247
25.5 Research and development contracts .....	11	11	11
26.0 Supplies and materials .....	1	2	1
31.0 Equipment .....	217	217	217
32.0 Land and structures .....	635	730	635
41.0 Grants, subsidies, and contributions .....	1,120	1,013	840
99.0 Direct obligations .....	5,495	5,355	4,178
99.0 Reimbursable obligations .....	577	520	520
99.9 Total new obligations, unexpired accounts .....	6,072	5,875	4,698

## Employment Summary

Identification code 089-0222-0-1-251	2017 actual	2018 est.	2019 est.
1001 Direct civilian full-time equivalent employment .....	873	867	785

## ADVANCED RESEARCH PROJECTS AGENCY—ENERGY

Note.—A full-year 2018 appropriation for this account was not enacted at the time the budget was prepared; therefore, the budget assumes this account is operating under the Continuing Appropriations Act, 2018 (Division D of P.L. 115-56, as amended). The amounts included for 2018 reflect the annualized level provided by the continuing resolution.

## Program and Financing (in millions of dollars)

Identification code 089-0337-0-1-270	2017 actual	2018 est.	2019 est.
<b>Obligations by program activity:</b>			
0001 ARPA-E Projects .....	271	199	.....
0002 Program Direction .....	28	29	.....
0799 Total direct obligations .....	299	228	.....
0801 Advanced Research Projects Agency - Energy (Reimbursable) .....	1	1	.....
0900 Total new obligations, unexpired accounts .....	300	229	.....
<b>Budgetary resources:</b>			
Unobligated balance:			
1000 Unobligated balance brought forward, Oct 1 .....	231	255	329
1021 Recoveries of prior year unpaid obligations .....	19	.....	.....
1050 Unobligated balance (total) .....	250	255	329
Budget authority:			
Appropriations, discretionary:			
1100 Appropriation .....	306	304	.....
1131 Unobligated balance of appropriations permanently reduced .....	-1	-1	.....
1160 Appropriation, discretionary (total) .....	305	303	.....
1900 Budget authority (total) .....	305	303	.....
1930 Total budgetary resources available .....	555	558	329
Memorandum (non-add) entries:			
1941 Unexpired unobligated balance, end of year .....	255	329	329
<b>Change in obligated balance:</b>			
Unpaid obligations:			
3000 Unpaid obligations, brought forward, Oct 1 .....	497	501	403
3010 New obligations, unexpired accounts .....	300	229	.....
3020 Outlays (gross) .....	-270	-327	-323
3040 Recoveries of prior year unpaid obligations, unexpired .....	-19	.....	.....
3041 Recoveries of prior year unpaid obligations, expired .....	-7	.....	.....
3050 Unpaid obligations, end of year .....	501	403	80
Uncollected payments:			
3060 Uncollected pymts, Fed sources, brought forward, Oct 1 .....	-2	-1	-1
3071 Change in uncollected pymts, Fed sources, expired .....	1	.....	.....
3090 Uncollected pymts, Fed sources, end of year .....	-1	-1	-1
Memorandum (non-add) entries:			
3100 Obligated balance, start of year .....	495	500	402

3200	Obligated balance, end of year .....	500	402	79
<b>Budget authority and outlays, net:</b>				
Discretionary:				
4000	Budget authority, gross .....	305	303	.....
Outlays, gross:				
4010	Outlays from new discretionary authority .....	28	91	.....
4011	Outlays from discretionary balances .....	242	236	323
4020	Outlays, gross (total) .....	270	327	323
Offsets against gross budget authority and outlays:				
Offsetting collections (collected) from:				
4030	Federal sources .....	-1	.....	.....
Additional offsets against gross budget authority only:				
4052	Offsetting collections credited to expired accounts .....	1	.....	.....
4060	Additional offsets against budget authority only (total) .....	1	.....	.....
4070	Budget authority, net (discretionary) .....	305	303	.....
4080	Outlays, net (discretionary) .....	269	327	323
4180	Budget authority, net (total) .....	305	303	.....
4190	Outlays, net (total) .....	269	327	323

The U.S. Department of Energy's Advanced Research Projects Agency-Energy (ARPA-E) was established by the America COMPETES Act of 2007 (Public Law 110-69), as amended. ARPA-E will wind down operations in FY 2018 with the expectation that it will shut down in FY 2019, with remaining monitoring and contract closeout activities transferred elsewhere within DOE.

**Object Classification** (in millions of dollars)

Identification code 089-0337-0-1-270	2017 actual	2018 est.	2019 est.
Direct obligations:			
Personnel compensation:			
11.1 Full-time permanent .....	1	1	.....
11.3 Other than full-time permanent .....	6	5	.....
11.9 Total personnel compensation .....	7	6	.....
12.1 Civilian personnel benefits .....	2	2	.....
21.0 Travel and transportation of persons .....	1	.....	.....
25.1 Advisory and assistance services .....	10	5	.....
25.2 Other services from non-Federal sources .....	12	6	.....
25.3 Other goods and services from Federal sources .....	3	1	.....
25.4 Operation and maintenance of facilities .....	31	9	.....
25.5 Research and development contracts .....	232	199	.....
31.0 Equipment .....	1	.....	.....
99.0 Direct obligations .....	299	228	.....
99.0 Reimbursable obligations .....	1	1	.....
99.9 Total new obligations, unexpired accounts .....	300	229	.....

**Employment Summary**

Identification code 089-0337-0-1-270	2017 actual	2018 est.	2019 est.
1001 Direct civilian full-time equivalent employment .....	49	44	.....

**ENERGY SUPPLY AND CONSERVATION****Program and Financing** (in millions of dollars)

Identification code 089-0224-0-1-999	2017 actual	2018 est.	2019 est.
<b>Budgetary resources:</b>			
Unobligated balance:			
1000 Unobligated balance brought forward, Oct 1 .....	7	6	6
1010 Unobligated balance transfer to other accts [089-0321] .....	-1	.....	.....
1050 Unobligated balance (total) .....	6	6	6
1930 Total budgetary resources available .....	6	6	6
Memorandum (non-add) entries:			
1941 Unexpired unobligated balance, end of year .....	6	6	6
<b>Change in obligated balance:</b>			
Uncollected payments:			
3060 Obligated balance transferred to other accts .....	-2	-2	-2
3090 Uncollected pymts, Fed sources, end of year .....	-2	-2	-2
Memorandum (non-add) entries:			
3100 Obligated balance, start of year .....	-2	-2	-2

3200	Obligated balance, end of year .....	-2	-2	-2
4180	Budget authority, net (total) .....	.....	.....	.....
4190	Outlays, net (total) .....	.....	.....	.....

**NUCLEAR ENERGY**

For Department of Energy expenses including the purchase, construction, and acquisition of plant and capital equipment, and other expenses necessary for nuclear energy activities in carrying out the purposes of the Department of Energy Organization Act (42 U.S.C. 7101 et seq.), including the acquisition or condemnation of any real property or any facility or for plant or facility acquisition, construction, or expansion, \$757,090,000, to remain available until expended: Provided, That of such amount, \$66,500,000 shall be available until September 30, 2020, for program direction.

Note.—A full-year 2018 appropriation for this account was not enacted at the time the budget was prepared; therefore, the budget assumes this account is operating under the Continuing Appropriations Act, 2018 (Division D of P.L. 115-56, as amended). The amounts included for 2018 reflect the annualized level provided by the continuing resolution.

**Program and Financing** (in millions of dollars)

Identification code 089-0319-0-1-999	2017 actual	2018 est.	2019 est.
<b>Obligations by program activity:</b>			
0032 Reactor Concepts RD&D .....	130	130	163
0041 Fuel Cycle R&D .....	211	204	60
0042 Integrated University Program .....	5	5	.....
0043 Nuclear Energy Enabling Technologies R&D .....	107	113	116
0091 Research and Development programs, subtotal .....	453	452	339
0301 Radiological Facilities Management .....	17	17	9
0401 Idaho Facilities Management .....	313	308	204
0450 Idaho National Laboratory safeguards and security .....	129	127	136
0451 International Nuclear Safety .....	4	.....	.....
0491 Infrastructure programs, subtotal .....	446	435	340
0501 Small Modular Reactor Licensing Technical Support Program .....	85	93	.....
0502 Supercritical Transformational Electric Power Generation .....	5	5	.....
0551 Program Direction .....	77	79	67
0552 International Nuclear Energy Cooperation .....	3	3	2
0591 Other direct program activities, subtotal .....	170	180	69
0799 Total direct obligations .....	1,086	1,084	757
0801 Nuclear Energy (Reimbursable) .....	127	120	120
0900 Total new obligations, unexpired accounts .....	1,213	1,204	877
<b>Budgetary resources:</b>			
Unobligated balance:			
1000 Unobligated balance brought forward, Oct 1 .....	40	41	40
1011 Unobligated balance transfer from other acct [072-0306] .....	4	.....	.....
1021 Recoveries of prior year unpaid obligations .....	14	.....	.....
1050 Unobligated balance (total) .....	58	41	40
Budget authority:			
Appropriations, discretionary:			
1100 Appropriation .....	1,017	1,009	757
1120 Appropriations transferred to other accts [089-0222] .....	-16	.....	.....
1121 Appropriations transferred from other acct [089-0314] .....	75	75	.....
1131 Unobligated balance of appropriations permanently reduced .....	-1	-1	.....
1160 Appropriation, discretionary (total) .....	1,075	1,083	757
Spending authority from offsetting collections, discretionary:			
1700 Collected .....	116	120	120
1701 Change in uncollected payments, Federal sources .....	5	.....	.....
1750 Spending auth from offsetting collections, disc (total) .....	121	120	120
1900 Budget authority (total) .....	1,196	1,203	877
1930 Total budgetary resources available .....	1,254	1,244	917
Memorandum (non-add) entries:			
1941 Unexpired unobligated balance, end of year .....	41	40	40

**Change in obligated balance:**

Unpaid obligations:			
3000 Unpaid obligations, brought forward, Oct 1 .....	718	813	625
3010 New obligations, unexpired accounts .....	1,213	1,204	877
3020 Outlays (gross) .....	-1,104	-1,392	-1,035
3040 Recoveries of prior year unpaid obligations, unexpired .....	-14	.....	.....
3050 Unpaid obligations, end of year .....	813	625	467
Uncollected payments:			
3060 Uncollected pymts, Fed sources, brought forward, Oct 1 .....	-67	-72	-72

NUCLEAR ENERGY—Continued  
Program and Financing—Continued

Identification code 089–0319–0–1–999		2017 actual	2018 est.	2019 est.
3070	Change in uncollected pymts, Fed sources, unexpired .....	–5	.....	.....
3090	Uncollected pymts, Fed sources, end of year .....	–72	–72	–72
Memorandum (non-add) entries:				
3100	Obligated balance, start of year .....	651	741	553
3200	Obligated balance, end of year .....	741	553	395
<b>Budget authority and outlays, net:</b>				
Discretionary:				
4000	Budget authority, gross .....	1,196	1,203	877
Outlays, gross:				
4010	Outlays from new discretionary authority .....	568	670	501
4011	Outlays from discretionary balances .....	536	722	534
4020	Outlays, gross (total) .....	1,104	1,392	1,035
Offsets against gross budget authority and outlays:				
Offsetting collections (collected) from:				
4030	Federal sources .....	–98	–120	–120
4033	Non-Federal sources .....	–18	.....	.....
4040	Offsets against gross budget authority and outlays (total) ....	–116	–120	–120
Additional offsets against gross budget authority only:				
4050	Change in uncollected pymts, Fed sources, unexpired .....	–5	.....	.....
4070	Budget authority, net (discretionary) .....	1,075	1,083	757
4080	Outlays, net (discretionary) .....	988	1,272	915
4180	Budget authority, net (total) .....	1,075	1,083	757
4190	Outlays, net (total) .....	988	1,272	915

The Office of Nuclear Energy (NE) funds a broad range of research and development (R&D) activities and supports Federal nuclear energy R&D infrastructure. The FY 2019 Budget continues programmatic support for advanced reactor R&D activities; fuel cycle R&D; and the safe, environmentally compliant, and cost-effective operation of the Department's facilities vital to nuclear energy R&D activities.

**Reactor Concepts Research, Development and Demonstration.**—This program conducts R&D on new and advanced reactor designs and technologies, including small modular reactors, and on advanced technologies for light water reactors (LWR).

**Fuel Cycle Research and Development.**—This program conducts R&D on advanced fuel cycle technologies that have the potential to improve resource utilization and energy generation, reduce waste generation, enhance safety, and mitigate proliferation risk.

**Nuclear Energy Enabling Technologies.**—This program conducts R&D and strategic infrastructure investments to develop innovative and crosscutting nuclear energy technologies, including investments in modeling and simulation tools and providing access to unique nuclear energy research capabilities through the Nuclear Science User Facilities (NSUF).

**Radiological Facilities Management.**—This program supports the continued operation of U.S. university research reactors by providing university research reactor fuel services, as well as maintenance of, and safety upgrades to, fuel fabrication equipment and facilities.

**Idaho Facilities Management.**—This program manages the planning, acquisition, operation, maintenance, and disposition of the NE-owned facilities and capabilities at the Idaho National Laboratory (INL), maintains Department of Energy mission-supporting facilities and capabilities at the INL in a safe, compliant status to support the Department's nuclear energy research, testing of naval reactor fuels and reactor core components, and a diverse range of national security technology programs that support the National Nuclear Security Administration (NNSA) and other Federal agencies such as the Department of Homeland Security in the areas of critical infrastructure protection, nuclear nonproliferation, and incident response.

**Idaho Site-wide Safeguards and Security.**—This program supports the INL complex nuclear facility infrastructure and enables R&D in support of multiple program missions.

**International Nuclear Energy Cooperation.**—This program supports the Department's international activities related to civil nuclear energy, includ-

ing analysis, development, coordination and implementation of international civil nuclear energy policy and integration of international nuclear technical activities.

**Program Direction.**—This program provides the federal staffing resources and associated costs required to support the overall direction and execution of the NE programs.

## Object Classification (in millions of dollars)

Identification code 089–0319–0–1–999		2017 actual	2018 est.	2019 est.
Direct obligations:				
Personnel compensation:				
11.1	Full-time permanent .....	40	40	28
11.3	Other than full-time permanent .....	1	1	1
11.5	Other personnel compensation .....	1	1	1
11.9	Total personnel compensation .....	42	42	30
12.1	Civilian personnel benefits .....	13	13	9
21.0	Travel and transportation of persons .....	1	1	1
25.1	Advisory and assistance services .....	10	10	7
25.2	Other services from non-Federal sources .....	168	167	117
25.3	Other goods and services from Federal sources .....	12	12	8
25.4	Operation and maintenance of facilities .....	741	739	516
25.7	Operation and maintenance of equipment .....	1	1	1
31.0	Equipment .....	8	8	5
32.0	Land and structures .....	33	33	23
41.0	Grants, subsidies, and contributions .....	58	58	40
99.0	Direct obligations .....	1,087	1,084	757
99.0	Reimbursable obligations .....	126	120	120
99.9	Total new obligations, unexpired accounts .....	1,213	1,204	877

## Employment Summary

Identification code 089–0319–0–1–999		2017 actual	2018 est.	2019 est.
1001	Direct civilian full-time equivalent employment .....	337	291	284
2001	Reimbursable civilian full-time equivalent employment .....	2	3	.....

## ELECTRICITY DELIVERY

*For Department of Energy expenses including the purchase, construction, and acquisition of plant and capital equipment, and other expenses necessary for electricity delivery activities in carrying out the purposes of the Department of Energy Organization Act (42 U.S.C. 7101 et seq.), including the acquisition or condemnation of any real property or any facility or for plant or facility acquisition, construction, or expansion, \$61,309,000, to remain available until expended: Provided, That of such amount, \$19,309,000 shall be available until September 30, 2020, for program direction.*

Note.—A full-year 2018 appropriation for this account was not enacted at the time the budget was prepared; therefore, the budget assumes this account is operating under the Continuing Appropriations Act, 2018 (Division D of P.L. 115–56, as amended). The amounts included for 2018 reflect the annualized level provided by the continuing resolution.

## Program and Financing (in millions of dollars)

Identification code 089–0318–0–1–271		2017 actual	2018 est.	2019 est.
<b>Obligations by program activity:</b>				
0011	Transmission reliability and resiliency .....	44	45	13
0012	Resilient distribution systems .....	54	54	10
0013	Cybersecurity for Energy Delivery Systems .....	45	45	.....
0014	Energy Storage .....	31	31	8
0015	Transformer Resilience and Advanced Components .....	7	7	5
0020	Infrastructure security and energy restoration .....	10	10	.....
0030	Transmission permitting and technical assistance .....	7	7	7
0040	Program Direction .....	28	28	18
0799	Total direct obligations .....	226	227	61
0801	Reimbursable work .....	4	20	3
0809	Reimbursable program activities, subtotal .....	4	20	3
0900	Total new obligations, unexpired accounts .....	230	247	64
<b>Budgetary resources:</b>				
Unobligated balance:				
1000	Unobligated balance brought forward, Oct 1 .....	25	27	14
1021	Recoveries of prior year unpaid obligations .....	4	.....	.....

1050	Unobligated balance (total) .....	29	27	14
	Budget authority:			
	Appropriations, discretionary:			
1100	Appropriation .....	230	228	61
1120	Appropriations transferred to other accts [089–0222] .....	-6		
1160	Appropriation, discretionary (total) .....	224	228	61
	Spending authority from offsetting collections, discretionary:			
1700	Collected .....	1	3	3
1701	Change in uncollected payments, Federal sources .....	3	3	3
1750	Spending auth from offsetting collections, disc (total) .....	4	6	6
1900	Budget authority (total) .....	228	234	67
1930	Total budgetary resources available .....	257	261	81
	Memorandum (non-add) entries:			
1941	Unexpired unobligated balance, end of year .....	27	14	17
<b>Change in obligated balance:</b>				
	Unpaid obligations:			
3000	Unpaid obligations, brought forward, Oct 1 .....	231	285	317
3010	New obligations, unexpired accounts .....	230	247	64
3020	Outlays (gross) .....	-172	-215	-151
3040	Recoveries of prior year unpaid obligations, unexpired .....	-4		
3050	Unpaid obligations, end of year .....	285	317	230
	Uncollected payments:			
3060	Uncollected pymts, Fed sources, brought forward, Oct 1 .....	-2	-5	-8
3070	Change in uncollected pymts, Fed sources, unexpired .....	-3	-3	-3
3090	Uncollected pymts, Fed sources, end of year .....	-5	-8	-11
	Memorandum (non-add) entries:			
3100	Obligated balance, start of year .....	229	280	309
3200	Obligated balance, end of year .....	280	309	219
<b>Budget authority and outlays, net:</b>				
	Discretionary:			
4000	Budget authority, gross .....	228	234	67
	Outlays, gross:			
4010	Outlays from new discretionary authority .....	33	97	30
4011	Outlays from discretionary balances .....	139	118	121
4020	Outlays, gross (total) .....	172	215	151
	Offsets against gross budget authority and outlays:			
	Offsetting collections (collected) from:			
4030	Federal sources .....	-1	-3	-3
4040	Offsets against gross budget authority and outlays (total) ....	-1	-3	-3
	Additional offsets against gross budget authority only:			
4050	Change in uncollected pymts, Fed sources, unexpired .....	-3	-3	-3
4070	Budget authority, net (discretionary) .....	224	228	61
4080	Outlays, net (discretionary) .....	171	212	148
4180	Budget authority, net (total) .....	224	228	61
4190	Outlays, net (total) .....	171	212	148

The mission of the Office of Electricity Delivery (OE) is to drive electric grid modernization and resiliency in energy infrastructure. OE leads the Department of Energy's efforts to strengthen, transform, and improve energy infrastructure so that consumers have access to reliable, secure, and clean sources of energy. OE programs include:

**Transmission Reliability.**—The Transmission Reliability program helps improve the reliability and resilience of the U.S. electric grid through early stage and foundational research and development (R&D) focused on measurement and control of the electricity system, as well as model development and validation for assessing risks across integrated energy systems.

**Resilient Distribution Systems (RDS).**—The RDS program focuses on addressing the challenges facing the electric power grid by developing the innovative technologies, tools, and techniques to modernize the distribution portion of the electric delivery system. RDS pursues strategic investments to improve reliability, resilience, outage recovery, and operational efficiency, building upon previous and ongoing grid modernization efforts.

**Cybersecurity for Energy Delivery System (CEDS).**—The CEDS program seeks to enhance the reliability and resilience of the Nation's energy infrastructure through near- and long-term activities to strengthen energy sector cybersecurity across the Nation, including enhancing the speed and effectiveness of threat and vulnerability sharing, developing an energy delivery system testing and analysis laboratory to better understand energy sector supply chain system and component vulnerabilities, and accelerating game-changing R&D to mitigate cyber incidents in today's systems and to develop next-generation resilient energy delivery systems. In FY 2019, this activity

is requested within the new Office of Cybersecurity, Energy Security, and Emergency Response.

**Energy Storage.**—The Energy Storage program helps ensure the stability, reliability, and resilience of electricity infrastructure by accelerating the development of new materials and device technologies that can lead to significant improvements in the cost and performance of energy storage systems and accelerated adoption of the energy storage solutions into the grid infrastructure.

**Transformer Resilience and Advanced Components (TRAC).**—The TRAC program supports modernization, hardening, and resilience of the grid by addressing challenges facing transformers and other critical grid hardware components that carry and control electricity from where it is generated to where it is used. Research in advanced materials, components, and devices will provide the fundamental physical capabilities and enhancements required to accommodate a rapidly changing power system, ensure all-hazards resilience to a more complex threat environment, and encourage the adoption of new technologies and approaches.

**Transmission Permitting & Technical Assistance.**—The Transmission Permitting & Technical Assistance program provides electricity policy technical assistance at the request of states, territories, regional entities, and tribes to help them develop and improve programs, policies, and laws that facilitate the development of reliable and affordable electricity infrastructure. The program also implements a number of legal authorities, such as coordination of transmission permitting by Federal agencies, periodic transmission congestion studies, permitting of cross-border transmission lines, authorization of electricity exports, and supporting actions by the Secretary of Energy during electricity emergencies.

**Infrastructure Security and Energy Restoration (ISER).**—The ISER program coordinates a national effort in collaboration with industry and State and local governments to secure the U.S. energy infrastructure against all hazards, reduce impacts from disruptive events, and recover from energy disruptions. In FY 2019, this activity is requested within the new Office of Cybersecurity, Energy Security, and Emergency Response.

**Program Direction.**—Program Direction provides for the costs associated with the Federal workforce and contractor services that support OE's mission. These costs include salaries, benefits, travel, training, building occupancy, IT systems, and other related expenses.

#### Object Classification (in millions of dollars)

Identification code 089–0318–0–1–271	2017 actual	2018 est.	2019 est.
Direct obligations:			
Personnel compensation:			
11.1 Full-time permanent .....	11	11	7
11.3 Other than full-time permanent .....	1	1	1
11.9 Total personnel compensation .....	12	12	8
12.1 Civilian personnel benefits .....	4	4	2
21.0 Travel and transportation of persons .....	1	1	
25.1 Advisory and assistance services .....	23	23	11
25.2 Other services from non-Federal sources .....	3	3	2
25.3 Other goods and services from Federal sources .....	3	3	2
25.4 Operation and maintenance of facilities .....	129	130	24
25.5 Research and development contracts .....	48	48	10
32.0 Land and structures .....	3	3	2
99.0 Direct obligations .....	226	227	61
99.0 Reimbursable obligations .....	3	20	3
99.5 Adjustment for rounding .....	1		
99.9 Total new obligations, unexpired accounts .....	230	247	64

#### Employment Summary

Identification code 089–0318–0–1–271	2017 actual	2018 est.	2019 est.
1001 Direct civilian full-time equivalent employment .....	91	91	60
2001 Reimbursable civilian full-time equivalent employment .....	2	2	2

## CYBERSECURITY, ENERGY SECURITY, AND EMERGENCY RESPONSE

For Department of Energy expenses including the purchase, construction, and acquisition of plant and capital equipment, and other expenses necessary for energy sector cybersecurity, energy security, and emergency response activities in carrying out the purposes of the Department of Energy Organization Act (42 U.S.C. 7101 et seq.), including the acquisition or condemnation of any real property or any facility or for plant or facility acquisition, construction, or expansion, \$95,800,000, to remain available until expended: Provided, That of such amount, \$7,800,000 shall be available until September 30, 2020, for program direction.

## Program and Financing (in millions of dollars)

Identification code 089–2250–0–1–271	2017 actual	2018 est.	2019 est.
<b>Obligations by program activity:</b>			
0010 Cybersecurity for energy delivery systems .....			70
0020 Infrastructure security and energy restoration .....			18
0030 Program direction .....			8
0900 Total new obligations, unexpired accounts .....			96
<b>Budgetary resources:</b>			
Budget authority:			
Appropriations, discretionary:			
1100 Appropriation .....			96
1930 Total budgetary resources available .....			96
<b>Change in obligated balance:</b>			
Unpaid obligations:			
3010 New obligations, unexpired accounts .....			96
3020 Outlays (gross) .....			–38
3050 Unpaid obligations, end of year .....			58
Memorandum (non-add) entries:			
3200 Obligated balance, end of year .....			58
<b>Budget authority and outlays, net:</b>			
Discretionary:			
4000 Budget authority, gross .....			96
Outlays, gross:			
4010 Outlays from new discretionary authority .....			38
4180 Budget authority, net (total) .....			96
4190 Outlays, net (total) .....			38

The Office of Cybersecurity, Energy Security, and Emergency Response is being established in FY 2019 to focus on energy infrastructure security and support the expanded national security responsibilities assigned to the Department of Energy. Programs include:

**Cybersecurity for Energy Delivery System (CEDS).**—The CEDS program seeks to enhance the reliability and resilience of the Nation's energy infrastructure through near- and long-term activities to strengthen energy sector cybersecurity across the Nation, including enhancing the speed and effectiveness of threat and vulnerability sharing, developing an energy delivery system testing and analysis laboratory to better understand energy sector supply chain system and component vulnerabilities, and accelerating game-changing R&D to mitigate cyber incidents in today's systems and to develop next-generation resilient energy delivery systems.

**Infrastructure Security and Energy Restoration (ISER).**—The ISER program coordinates a national effort in collaboration with industry and State and local governments to secure the U.S. energy infrastructure against all hazards, reduce impacts from disruptive events, and recover from energy disruptions.

**Program Direction.**—Program Direction provides for the costs associated with the Federal workforce and contractor services that support the mission. Beginning in FY 2019 the management of the Office of Petroleum Reserves, including the Strategic Petroleum Reserve, will be overseen by CESER.

## Object Classification (in millions of dollars)

Identification code 089–2250–0–1–271	2017 actual	2018 est.	2019 est.
11.1 Direct obligations: Personnel compensation: Full-time permanent .....			4
11.9 Total personnel compensation .....			4
12.1 Civilian personnel benefits .....			2

21.0 Travel and transportation of persons .....			1
25.1 Advisory and assistance services .....			13
25.2 Other services from non-Federal sources .....			2
25.3 Other goods and services from Federal sources .....			1
25.4 Operation and maintenance of facilities .....			54
25.5 Research and development contracts .....			19
99.9 Total new obligations, unexpired accounts .....			96

## Employment Summary

Identification code 089–2250–0–1–271	2017 actual	2018 est.	2019 est.
1001 Direct civilian full-time equivalent employment .....			29

## ENERGY EFFICIENCY AND RENEWABLE ENERGY

For Department of Energy expenses including the purchase, construction, and acquisition of plant and capital equipment, and other expenses necessary for energy efficiency and renewable energy activities in carrying out the purposes of the Department of Energy Organization Act (42 U.S.C. 7101 et seq.), including the acquisition or condemnation of any real property or any facility or for plant or facility acquisition, construction, or expansion, \$575,610,000, to remain available until expended: Provided, That of such amount, \$125,110,000 shall be available until September 30, 2020, for program direction.

Note.—A full-year 2018 appropriation for this account was not enacted at the time the budget was prepared; therefore, the budget assumes this account is operating under the Continuing Appropriations Act, 2018 (Division D of P.L. 115–56, as amended). The amounts included for 2018 reflect the annualized level provided by the continuing resolution.

## Program and Financing (in millions of dollars)

Identification code 089–0321–0–1–270	2017 actual	2018 est.	2019 est.
<b>Obligations by program activity:</b>			
0001 Vehicle Technologies .....	299	210	178
0002 Bioenergy Technologies .....	218	196	118
0003 Hydrogen & Fuel Cell Technologies .....	112	61	81
0091 Sustainable Transportation, subtotal .....	629	467	377
0101 Solar Energy .....	241	243	127
0102 Wind Energy .....	144	77	61
0103 Water Power .....	117	65	58
0104 Geothermal Technologies .....	50	80	81
0191 Renewable Electricity, subtotal .....	552	465	327
0201 Advanced Manufacturing .....	291	261	167
0202 Building Technologies .....	197	121	121
0203 Weatherization & Intergovernmental Activities .....	287	289	
0204 Federal Energy Management Program .....	29	24	21
0291 Energy Efficiency, subtotal .....	804	695	309
0301 Program Direction & Support .....	156	144	141
0302 Strategic Programs .....	21	19	
0303 Facilities & Infrastructure .....	92	91	90
0391 EERE Corporate Support, subtotal .....	269	254	231
0799 Total direct obligations .....	2,254	1,881	1,244
0810 Energy Efficiency and Renewable Energy (Reimbursable) .....	139	139	139
0900 Total new obligations, unexpired accounts .....	2,393	2,020	1,383
<b>Budgetary resources:</b>			
Unobligated balance:			
1000 Unobligated balance brought forward, Oct 1 .....	773	575	748
1010 Unobligated balance transfer to other accts [097–0360] .....	–45		
1010 Unobligated balance transfer to other accts [089–0222] .....	–2		
1011 Unobligated balance transfer from other acct [089–0224] .....	1		
1021 Recoveries of prior year unpaid obligations .....	124		
1050 Unobligated balance (total) .....	851	575	748
Budget authority:			
Appropriations, discretionary:			
1100 Appropriation .....	2,090	2,076	576
1120 Appropriations transferred to other accts [089–0222] .....	–43		
1131 Unobligated balance of appropriations permanently reduced .....	–55	–36	
1160 Appropriation, discretionary (total) .....	1,992	2,040	576
Spending authority from offsetting collections, discretionary:			
1700 Collected .....	151	153	153
1701 Change in uncollected payments, Federal sources .....	–26		
1750 Spending auth from offsetting collections, disc (total) .....	125	153	153

1900	Budget authority (total) .....	2,117	2,193	729
1930	Total budgetary resources available .....	2,968	2,768	1,477
Memorandum (non-add) entries:				
1941	Unexpired unobligated balance, end of year .....	575	748	94

**Change in obligated balance:**

Unpaid obligations:				
3000	Unpaid obligations, brought forward, Oct 1 .....	2,288	2,630	2,503
3010	New obligations, unexpired accounts .....	2,393	2,020	1,383
3020	Outlays (gross) .....	-1,926	-2,147	-2,121
3040	Recoveries of prior year unpaid obligations, unexpired .....	-124		
3041	Recoveries of prior year unpaid obligations, expired .....	-1		
3050	Unpaid obligations, end of year .....	2,630	2,503	1,765
Uncollected payments:				
3060	Uncollected pymts, Fed sources, brought forward, Oct 1 .....	-99	-73	-73
3070	Change in uncollected pymts, Fed sources, unexpired .....	26		
3090	Uncollected pymts, Fed sources, end of year .....	-73	-73	-73
Memorandum (non-add) entries:				
3100	Obligated balance, start of year .....	2,189	2,557	2,430
3200	Obligated balance, end of year .....	2,557	2,430	1,692

**Budget authority and outlays, net:**

Discretionary:				
4000	Budget authority, gross .....	2,117	2,193	729
Outlays, gross:				
4010	Outlays from new discretionary authority .....	418	707	312
4011	Outlays from discretionary balances .....	1,508	1,440	1,809
4020	Outlays, gross (total) .....	1,926	2,147	2,121
Offsets against gross budget authority and outlays:				
Offsetting collections (collected) from:				
4030	Federal sources .....	-91	-76	-76
4033	Non-Federal sources .....	-60	-77	-77
4040	Offsets against gross budget authority and outlays (total) ....	-151	-153	-153
Additional offsets against gross budget authority only:				
4050	Change in uncollected pymts, Fed sources, unexpired .....	26		
4060	Additional offsets against budget authority only (total) .....	26		
4070	Budget authority, net (discretionary) .....	1,992	2,040	576
4080	Outlays, net (discretionary) .....	1,775	1,994	1,968
4180	Budget authority, net (total) .....	1,992	2,040	576
4190	Outlays, net (total) .....	1,775	1,994	1,968

The Department of Energy's Office of Energy Efficiency and Renewable Energy (EERE) is one of the U.S. Government's research and development (R&D) organizations. EERE works closely with the National Laboratories, and with many of America's best innovators and businesses to support high-impact, early-stage applied R&D activities, relying upon the private sector to fund later-stage research, development, and commercialization of energy technologies in sustainable transportation, renewable power, and energy efficiency. EERE's investment portfolio is strongly positioned to enable American energy independence and domestic job-growth in the near to mid-term, while maintaining proper stewardship of taxpayer dollars.

**Sustainable Transportation.**—Conducts early-stage R&D through programs focused on vehicle technologies, bioenergy, and hydrogen and fuel cell technologies to enable industry to develop and deploy clean, domestic fuels and efficient, convenient, and affordable transportation choices that improve U.S. energy security, economic productivity, and environmental quality.

**Renewable Power.**—Conducts early-stage R&D through program offices focused on solar, wind, water, and geothermal energy technologies to enable industry to develop and deploy affordable, reliable, and renewable electricity options that allow regional optimization, indigenous resources utilization, and improves the resilience, reliability, and security of the electricity grid.

**Energy Efficiency.**—Conducts early-stage R&D through program offices focused on advanced manufacturing and building technologies to strengthen the body of knowledge that enables industry to improve the energy productivity, affordability, and energy security of our buildings and manufacturing sectors. Also funds the development of statutorily mandated efficiency standards and provides Federal energy management technical assistance.

**Corporate Programs.**—Supports EERE operations and management through program direction (e.g., salaries and benefits, support services,

working capital, etc.) and facilities and infrastructure at the National Renewable Energy Laboratory (e.g., general plant projects, general purpose equipment, safeguards and security, etc.).

**Object Classification (in millions of dollars)**

Identification code 089-0321-0-1-270		2017 actual	2018 est.	2019 est.
Direct obligations:				
Personnel compensation:				
11.1	Full-time permanent .....	77	72	55
11.3	Other than full-time permanent .....	3	2	2
11.5	Other personnel compensation .....	1	1	1
11.9	Total personnel compensation .....	81	75	58
12.1	Civilian personnel benefits .....	26	24	20
13.0	Benefits for former personnel .....			2
21.0	Travel and transportation of persons .....	4	4	3
23.3	Communications, utilities, and miscellaneous charges .....	2	2	1
25.1	Advisory and assistance services .....	121	115	80
25.2	Other services from non-Federal sources .....	20	20	15
25.3	Other goods and services from Federal sources .....	20	20	15
25.4	Operation and maintenance of facilities .....	1,084	950	730
25.5	Research and development contracts .....	92	90	70
26.0	Supplies and materials .....	2	2	1
31.0	Equipment .....	10	8	8
32.0	Land and structures .....	1	1	1
41.0	Grants, subsidies, and contributions .....	791	570	240
99.0	Direct obligations .....	2,254	1,881	1,244
99.0	Reimbursable obligations .....	139	139	139
99.9	Total new obligations, unexpired accounts .....	2,393	2,020	1,383

**Employment Summary**

Identification code 089-0321-0-1-270	2017 actual	2018 est.	2019 est.
1001 Direct civilian full-time equivalent employment .....	675	650	450

**NON-DEFENSE ENVIRONMENTAL CLEANUP**

*For Department of Energy expenses, including the purchase, construction, and acquisition of plant and capital equipment and other expenses necessary for non-defense environmental cleanup activities in carrying out the purposes of the Department of Energy Organization Act (42 U.S.C. 7101 et seq.), including the acquisition or condemnation of any real property or any facility or for plant or facility acquisition, construction, or expansion, \$218,400,000, to remain available until expended.*

Note.—A full-year 2018 appropriation for this account was not enacted at the time the budget was prepared; therefore, the budget assumes this account is operating under the Continuing Appropriations Act, 2018 (Division D of P.L. 115-56, as amended). The amounts included for 2018 reflect the annualized level provided by the continuing resolution.

**Program and Financing (in millions of dollars)**

Identification code 089-0315-0-1-271		2017 actual	2018 est.	2019 est.
<b>Obligations by program activity:</b>				
0002	Fast Flux Test Facility .....	2	2	2
0003	Gaseous Diffusion Plants .....	102	101	101
0004	Small Sites .....	81	76	55
0005	West Valley Demonstration Project .....	66	66	60
0799	Total direct obligations .....	251	245	218
0801	Non-defense Environmental Cleanup (Reimbursable) .....	33	29	29
0900	Total new obligations, unexpired accounts .....	284	274	247
<b>Budgetary resources:</b>				
Unobligated balance:				
1000	Unobligated balance brought forward, Oct 1 .....	2		
1021	Recoveries of prior year unpaid obligations .....	3		
1050	Unobligated balance (total) .....	5		
Budget authority:				
Appropriations, discretionary:				
1100	Appropriation .....	247	245	218
Spending authority from offsetting collections, discretionary:				
1700	Collected .....	32	29	29
1900	Budget authority (total) .....	279	274	247
1930	Total budgetary resources available .....	284	274	247

## NON-DEFENSE ENVIRONMENTAL CLEANUP—Continued

## Program and Financing—Continued

Identification code 089–0315–0–1–271	2017 actual	2018 est.	2019 est.
<b>Change in obligated balance:</b>			
Unpaid obligations:			
3000 Unpaid obligations, brought forward, Oct 1 .....	157	127	85
3010 New obligations, unexpired accounts .....	284	274	247
3020 Outlays (gross) .....	–311	–316	–255
3040 Recoveries of prior year unpaid obligations, unexpired .....	–3	.....	.....
3050 Unpaid obligations, end of year .....	127	85	77
Uncollected payments:			
3060 Uncollected pymts, Fed sources, brought forward, Oct 1 .....	–1	–1	–1
3090 Uncollected pymts, Fed sources, end of year .....	–1	–1	–1
Memorandum (non-add) entries:			
3100 Obligated balance, start of year .....	156	126	84
3200 Obligated balance, end of year .....	126	84	76
<b>Budget authority and outlays, net:</b>			
Discretionary:			
4000 Budget authority, gross .....	279	274	247
Outlays, gross:			
4010 Outlays from new discretionary authority .....	188	201	182
4011 Outlays from discretionary balances .....	123	115	73
4020 Outlays, gross (total) .....	311	316	255
Offsets against gross budget authority and outlays:			
Offsetting collections (collected) from:			
4030 Federal sources .....	–1	.....	.....
4033 Non-Federal sources .....	–31	–29	–29
4040 Offsets against gross budget authority and outlays (total) ....	–32	–29	–29
4070 Budget authority, net (discretionary) .....	247	245	218
4080 Outlays, net (discretionary) .....	279	287	226
4180 Budget authority, net (total) .....	247	245	218
4190 Outlays, net (total) .....	279	287	226

The Non-Defense Environmental Cleanup program includes funds to manage and clean up sites used for civilian energy research and non-defense related activities. These activities resulted in radioactive, hazardous, and mixed waste contamination that requires remediation, stabilization, or some other type of corrective action, as well as the decontamination and decommissioning of former research and production buildings and supporting infrastructure. The budget displays the cleanup program by site and activity.

**West Valley Demonstration Project.**—Funds waste disposition, building decontamination, and removal of non-essential facilities in the near-term.

**Gaseous Diffusion Plants.**—Funds surveillance and maintenance of the former Uranium Program facilities and manages legacy polychlorinated biphenyl contamination. The program also includes the operation of two depleted uranium hexafluoride conversion facilities at Paducah, Kentucky, and Portsmouth, Ohio, which are converting the depleted uranium hexafluoride into a more stable form for reuse or disposition.

**Fast Flux Test Facility.**—Funds the long-term surveillance and maintenance and eventual decontamination and decommissioning of the Fast Flux Test Facility, constructed and operated from the 1960s through 1980s.

**Small Sites.**—Funds cleanup, closure, and post-closure environmental activities at a number of geographic sites across the nation, including the Energy Technology Engineering Center and Moab, as well as non-defense activities at Idaho and Oak Ridge. Some sites are associated with other Department of Energy programs, particularly the Office of Science, and will have continuing missions after EM completes the cleanup. Others will transition to the Office of Legacy Management or private-sector entities for post-closure activities.

## Object Classification (in millions of dollars)

Identification code 089–0315–0–1–271	2017 actual	2018 est.	2019 est.
Direct obligations:			
25.2 Other services from non-Federal sources .....	9	9	8
25.3 Other goods and services from Federal sources .....	1	1	1
25.4 Operation and maintenance of facilities .....	231	225	201
32.0 Land and structures .....	4	4	3

41.0 Grants, subsidies, and contributions .....	6	6	5
99.0 Direct obligations .....	251	245	218
99.0 Reimbursable obligations .....	33	29	29
99.9 Total new obligations, unexpired accounts .....	284	274	247

## FOSSIL ENERGY RESEARCH AND DEVELOPMENT

*For Department of Energy expenses necessary in carrying out fossil energy research and development activities, under the authority of the Department of Energy Organization Act (42 U.S.C. 7101 et seq.), including the acquisition of interest, including defeasible and equitable interests in any real property or any facility or for plant or facility acquisition or expansion, and for conducting inquiries, technological investigations and research concerning the extraction, processing, use, and disposal of mineral substances without objectionable social and environmental costs (30 U.S.C. 3, 1602, and 1603), \$302,070,000, to remain available until expended: Provided, That of such amount \$61,070,000 shall be available until September 30, 2020, for program direction.*

Note.—A full-year 2018 appropriation for this account was not enacted at the time the budget was prepared; therefore, the budget assumes this account is operating under the Continuing Appropriations Act, 2018 (Division D of P.L. 115–56, as amended). The amounts included for 2018 reflect the annualized level provided by the continuing resolution.

## Program and Financing (in millions of dollars)

Identification code 089–0213–0–1–271	2017 actual	2018 est.	2019 est.
<b>Obligations by program activity:</b>			
0002 Carbon Capture .....	84	61	.....
0003 Carbon Storage .....	114	83	.....
0004 Advanced Energy Systems .....	73	53	58
0005 Cross-Cutting Research .....	38	28	36
0007 Program Direction .....	30	22	.....
0012 Program Direction - Management .....	31	23	55
0013 Program Direction - NETL R&D .....	70	51	.....
0017 Special Recruitment Program .....	1	1	.....
0020 Natural gas technologies .....	34	25	6
0021 Unconventional FE Technologies .....	5	4	15
0022 STEP (Supercritical CO <sub>2</sub> ) .....	23	17	.....
0024 NETL Research and Operations .....	43	31	39
0025 NETL Infrastructure .....	35	26	35
0027 Carbon Capture, Utilization and Storage .....	.....	.....	23
0028 NETL Coal R&D .....	.....	.....	35
0799 Total direct obligations .....	581	425	302
0801 Fossil Energy Research and Development (Reimbursable) .....	1	1	1
0900 Total new obligations, unexpired accounts .....	582	426	303
<b>Budgetary resources:</b>			
Unobligated balance:			
1000 Unobligated balance brought forward, Oct 1 .....	368	242	243
1021 Recoveries of prior year unpaid obligations .....	49	.....	.....
1050 Unobligated balance (total) .....	417	242	243
Budget authority:			
Appropriations, discretionary:			
1100 Appropriation .....	668	665	302
1120 Appropriations transferred to other accts [089–0222] .....	–15	.....	.....
1131 Unobligated balance of appropriations permanently reduced .....	–247	–240	.....
1160 Appropriation, discretionary (total) .....	406	425	302
Spending authority from offsetting collections, discretionary:			
1700 Collected .....	2	2	2
1701 Change in uncollected payments, Federal sources .....	–1	.....	.....
1750 Spending auth from offsetting collections, disc (total) .....	1	2	2
1900 Budget authority (total) .....	407	427	304
1930 Total budgetary resources available .....	824	669	547
Memorandum (non-add) entries:			
1941 Unexpired unobligated balance, end of year .....	242	243	244

## Change in obligated balance:

Unpaid obligations:			
3000 Unpaid obligations, brought forward, Oct 1 .....	772	733	422
3010 New obligations, unexpired accounts .....	582	426	303
3020 Outlays (gross) .....	–572	–737	–572
3040 Recoveries of prior year unpaid obligations, unexpired .....	–49	.....	.....
3050 Unpaid obligations, end of year .....	733	422	153



Uncollected payments:			
3060	Uncollected pymts, Fed sources, brought forward, Oct 1 .....	-1	
3070	Change in uncollected pymts, Fed sources, unexpired .....	1	
Memorandum (non-add) entries:			
3100	Obligated balance, start of year .....	771	733 422
3200	Obligated balance, end of year .....	733	422 153
<b>Budget authority and outlays, net:</b>			
Discretionary:			
4000	Budget authority, gross .....	407	427 304
Outlays, gross:			
4010	Outlays from new discretionary authority .....	161	171 122
4011	Outlays from discretionary balances .....	411	566 450
4020	Outlays, gross (total) .....	572	737 572
Offsets against gross budget authority and outlays:			
Offsetting collections (collected) from:			
4030	Federal sources .....	-1	
4033	Non-Federal sources .....	-1	-2 -2
4040	Offsets against gross budget authority and outlays (total) ....	-2	-2 -2
Additional offsets against gross budget authority only:			
4050	Change in uncollected pymts, Fed sources, unexpired .....	1	
4060	Additional offsets against budget authority only (total) .....	1	
4070	Budget authority, net (discretionary) .....	406	425 302
4080	Outlays, net (discretionary) .....	570	735 570
4180	Budget authority, net (total) .....	406	425 302
4190	Outlays, net (total) .....	570	735 570

The Fossil Energy Research and Development (FER&D) program conducts research that supports the Nation's ability to increase the use of domestic fossil energy resources affordably, efficiently, and cleanly. The program funds early-stage R&D with academia, national laboratories, and the private sector to generate knowledge that industry can use to develop new products and processes. Program activities, including National Energy Technology Laboratory (NETL) R&D, focus on: 1) early-stage, high-risk fossil-fueled power systems and components that address challenges of reliability and improve the efficiency of existing units; 2) cross-cutting research to bridge fundamental science and early-stage applied engineering development for advanced materials and computational systems and the utilization of coal and CO<sub>2</sub> for the production of critical materials and products; 3) early-stage R&D on transformational CO<sub>2</sub> capture technologies applicable to both new and existing fossil-fueled facilities; and 4) CO<sub>2</sub> storage, with emphasis on early-stage research focused on associated storage in depleted fields; offshore storage; and addressing the R&D challenges of injection. The program will also conduct early-stage research to generate new, novel understanding of shale geology and fracture dynamics for unconventional oil and natural gas resources. In addition, FER&D will conduct work focused on characterizing gas hydrates and will explore new concepts for novel technologies that could improve the reliability and operational efficiency of natural gas transmission, distribution, and storage facilities. NETL R&D includes funding for scientists, engineers, and project managers conducting both in-house and collaborative research. The NETL Infrastructure and Operations program supports the upkeep of NETL's lab footprint in three geographic locations: Morgantown, WV; Pittsburgh, PA; and Albany, OR. This budget request initiates an effort to consolidate NETL's multi-site footprint to the extent beneficial to a single operational complex. Program Direction provides for the Headquarters and NETL workforce responsible for the oversight and administration of FER&D. Also included is the Import/Export Authorization program, which will continue regulatory reviews and oversight of natural gas imports and exports.

**Object Classification** (in millions of dollars)

Identification code 089-0213-0-1-271			
	2017 actual	2018 est.	2019 est.
Direct obligations:			
Personnel compensation:			
11.1	Full-time permanent .....	63	39 28
11.3	Other than full-time permanent .....	1	1
11.5	Other personnel compensation .....	1	1
11.9	Total personnel compensation .....	65	41 28
12.1	Civilian personnel benefits .....	21	13 9
21.0	Travel and transportation of persons .....	3	2 2

23.3	Communications, utilities, and miscellaneous charges .....	6	3 2
25.1	Advisory and assistance services .....	145	70 50
25.2	Other services from non-Federal sources .....	11	7 5
25.3	Other goods and services from Federal sources .....	7	7 5
25.4	Operation and maintenance of facilities .....	83	34 24
25.5	Research and development contracts .....	220	234 167
25.7	Operation and maintenance of equipment .....	4	2 1
26.0	Supplies and materials .....	5	1 1
31.0	Equipment .....	2	8 6
32.0	Land and structures .....	6	1 1
41.0	Grants, subsidies, and contributions .....	3	2 1
99.0	Direct obligations .....	581	425 302
99.0	Reimbursable obligations .....	1	1 1
99.9	Total new obligations, unexpired accounts .....	582	426 303

**Employment Summary**

Identification code 089-0213-0-1-271			
	2017 actual	2018 est.	2019 est.
1001	Direct civilian full-time equivalent employment .....	553	615 615

**NAVAL PETROLEUM AND OIL SHALE RESERVES**

*For Department of Energy expenses necessary to carry out naval petroleum and oil shale reserve activities, \$10,000,000, to remain available until expended: Provided, That notwithstanding any other provision of law, unobligated funds remaining from prior years shall be available for all naval petroleum and oil shale reserve activities.*

Note.—A full-year 2018 appropriation for this account was not enacted at the time the budget was prepared; therefore, the budget assumes this account is operating under the Continuing Appropriations Act, 2018 (Division D of P.L. 115-56, as amended). The amounts included for 2018 reflect the annualized level provided by the continuing resolution.

**Program and Financing** (in millions of dollars)

Identification code 089-0219-0-1-271			
	2017 actual	2018 est.	2019 est.
<b>Obligations by program activity:</b>			
0001	Production and Operations .....	16	15 18
0002	Naval Petroleum and Oil Shale Reserves Program Direction .....		
0900	Total new obligations, unexpired accounts .....	16	15 20
<b>Budgetary resources:</b>			
Unobligated balance:			
1000	Unobligated balance brought forward, Oct 1 .....	26	22 22
1021	Recoveries of prior year unpaid obligations .....		
1050	Unobligated balance (total) .....	26	22 30
Budget authority:			
Appropriations, discretionary:			
1100	Appropriation .....	15	15 5
1131	Unobligated balance of appropriations permanently reduced .....	-3	
1160	Appropriation, discretionary (total) .....	12	15 5
1900	Budget authority (total) .....	12	15 5
1930	Total budgetary resources available .....	38	37 35
Memorandum (non-add) entries:			
1941	Unexpired unobligated balance, end of year .....	22	22 15
<b>Change in obligated balance:</b>			
Unpaid obligations:			
3000	Unpaid obligations, brought forward, Oct 1 .....	11	14 15
3010	New obligations, unexpired accounts .....	16	15 20
3020	Outlays (gross) .....	-13	-14 -8
3040	Recoveries of prior year unpaid obligations, unexpired .....		
3050	Unpaid obligations, end of year .....	14	15 19
Memorandum (non-add) entries:			
3100	Obligated balance, start of year .....	11	14 15
3200	Obligated balance, end of year .....	14	15 19

**Budget authority and outlays, net:**

Discretionary:			
4000	Budget authority, gross .....	12	15 5
Outlays, gross:			
4010	Outlays from new discretionary authority .....	1	9 3
4011	Outlays from discretionary balances .....	12	5 5
4020	Outlays, gross (total) .....	13	14 8
4180	Budget authority, net (total) .....	12	15 5

NAVAL PETROLEUM AND OIL SHALE RESERVES—Continued  
Program and Financing—Continued

Identification code 089-0219-0-1-271	2017 actual	2018 est.	2019 est.
4190 Outlays, net (total) .....	13	14	8

This account funds environmental activities at Naval Petroleum Reserve 1 (NPR-1) in California (Elk Hills) and Naval Petroleum Reserve 3 (NPR-3) in Wyoming (Teapot Dome). Following the sale of the government's interests in Naval Petroleum Reserve 1 (NPR-1) in California (Elk Hills), post-sale environmental assessment/remediation activities continue to be required by the legally binding agreements under the Corrective Action Consent Agreement with the State of California Department of Toxic Substances Control (DTSC). Program activities encompass execution of a technical baseline, interim measures, environmental sampling and analysis, corrective measures, waste removal and disposal, and confirmatory sampling. In FY 2019, these activities will continue to serve as the basis for requests to DTSC to release DOE from further corrective action for 131 areas of concern at NPR-1.

On January 30, 2015, the Department finalized the sale of the Teapot Dome Oilfield. The Department will oversee post-sale remediation activities and ground water sampling for the closure of the landfill in compliance with National Environmental Policy Act and Wyoming Department of Environmental Quality requirements.

## Object Classification (in millions of dollars)

Identification code 089-0219-0-1-271	2017 actual	2018 est.	2019 est.
Direct obligations:			
25.2 Other services from non-Federal sources .....	2	2	2
25.4 Operation and maintenance of facilities .....	14	13	18
99.9 Total new obligations, unexpired accounts .....	16	15	20

## Employment Summary

Identification code 089-0219-0-1-271	2017 actual	2018 est.	2019 est.
1001 Direct civilian full-time equivalent employment .....	2	4	.....

## STRATEGIC PETROLEUM RESERVE

For Department of Energy expenses necessary for Strategic Petroleum Reserve facility development and operations and program management activities pursuant to the Energy Policy and Conservation Act (42 U.S.C. 6201 et seq.), \$175,105,000, to remain available until expended.

Note.—A full-year 2018 appropriation for this account was not enacted at the time the budget was prepared; therefore, the budget assumes this account is operating under the Continuing Appropriations Act, 2018 (Division D of P.L. 115-56, as amended). The amounts included for 2018 reflect the annualized level provided by the continuing resolution.

## Program and Financing (in millions of dollars)

Identification code 089-0218-0-1-274	2017 actual	2018 est.	2019 est.
<b>Obligations by program activity:</b>			
0001 SPR Management .....	22	22	29
0002 SPR Storage Facilities Development .....	199	199	151
0900 Total new obligations, unexpired accounts .....	221	221	180
<b>Budgetary resources:</b>			
Unobligated balance:			
1000 Unobligated balance brought forward, Oct 1 .....	5	8	8
1021 Recoveries of prior year unpaid obligations .....	1	.....	.....
1050 Unobligated balance (total) .....	6	8	8
Budget authority:			
Appropriations, discretionary:			
1100 Appropriation .....	223	221	180
1930 Total budgetary resources available .....	229	229	188
Memorandum (non-add) entries:			
1941 Unexpired unobligated balance, end of year .....	8	8	8

## Change in obligated balance:

Unpaid obligations:			
3000 Unpaid obligations, brought forward, Oct 1 .....	113	134	128
3010 New obligations, unexpired accounts .....	221	221	180
3020 Outlays (gross) .....	-199	-227	-213
3040 Recoveries of prior year unpaid obligations, unexpired .....	-1	.....	.....
3050 Unpaid obligations, end of year .....	134	128	95
Memorandum (non-add) entries:			
3100 Obligated balance, start of year .....	113	134	128
3200 Obligated balance, end of year .....	134	128	95

## Budget authority and outlays, net:

Discretionary:			
4000 Budget authority, gross .....	223	221	180
Outlays, gross:			
4010 Outlays from new discretionary authority .....	103	122	99
4011 Outlays from discretionary balances .....	96	105	114
4020 Outlays, gross (total) .....	199	227	213
4180 Budget authority, net (total) .....	223	221	180
4190 Outlays, net (total) .....	199	227	213

The Strategic Petroleum Reserve (SPR) provides strategic and economic security against foreign and domestic disruptions in oil supplies via an emergency stockpile of crude oil. The program fulfills United States' obligations under the International Energy Program, which avails the United States International Energy Agency assistance through its coordinated energy emergency response plans, and provides a deterrent against energy supply disruptions. The FY 2019 Budget will support the SPR's operational readiness and drawdown capabilities of 4.13MB/d. The program will complete the degasification of crude oil inventory at the West Hackberry site and conduct cavern wellbore diagnostic and remediation activities.

## Object Classification (in millions of dollars)

Identification code 089-0218-0-1-274	2017 actual	2018 est.	2019 est.
Direct obligations:			
11.1 Personnel compensation: Full-time permanent .....	12	12	12
12.1 Civilian personnel benefits .....	4	4	4
21.0 Travel and transportation of persons .....	1	1	1
23.1 Rental payments to GSA .....	1	1	1
23.2 Rental payments to others .....	2	2	2
23.3 Communications, utilities, and miscellaneous charges .....	1	1	1
25.1 Advisory and assistance services .....	1	1	1
25.2 Other services from non-Federal sources .....	18	10	10
25.4 Operation and maintenance of facilities .....	181	189	148
99.9 Total new obligations, unexpired accounts .....	221	221	180

## Employment Summary

Identification code 089-0218-0-1-274	2017 actual	2018 est.	2019 est.
1001 Direct civilian full-time equivalent employment .....	111	126	126
2001 Reimbursable civilian full-time equivalent employment .....	4	.....	.....

## SPR PETROLEUM ACCOUNT

## Program and Financing (in millions of dollars)

Identification code 089-0233-0-1-274	2017 actual	2018 est.	2019 est.
<b>Obligations by program activity:</b>			
0001 SPR Petroleum Account .....	1	8	5
<b>Budgetary resources:</b>			
Unobligated balance:			
1000 Unobligated balance brought forward, Oct 1 .....	14	13	5
1930 Total budgetary resources available .....	14	13	5
Memorandum (non-add) entries:			
1941 Unexpired unobligated balance, end of year .....	13	5	.....
<b>Change in obligated balance:</b>			
Unpaid obligations:			
3000 Unpaid obligations, brought forward, Oct 1 .....	64	40	13
3010 New obligations, unexpired accounts .....	1	8	5

3020	Outlays (gross) .....	-25	-35	-18
3050	Unpaid obligations, end of year .....	40	13	
	Memorandum (non-add) entries:			
3100	Obligated balance, start of year .....	64	40	13
3200	Obligated balance, end of year .....	40	13	
<b>Budget authority and outlays, net:</b>				
	Discretionary:			
	Outlays, gross:			
4011	Outlays from discretionary balances .....	5		
	Mandatory:			
	Outlays, gross:			
4101	Outlays from mandatory balances .....	20	35	18
4180	Budget authority, net (total) .....			
4190	Outlays, net (total) .....	25	35	18

The SPR Petroleum Account funds SPR petroleum acquisition, transportation, and drawdown activities as well as the Northeast Gasoline Supply Reserve (NGSR). The FY 2019 budget supports the sale of one million barrels of SPR crude oil to fund costs of drawdown operations.

Consistent with the FY 2018 budget request, the Administration is proposing to disestablish the NGSR in this FY 2019 budget request. The NGSR has not been utilized and has issues surrounding cost efficiency and operational functionality.

#### Object Classification (in millions of dollars)

Identification code 089-0233-0-1-274	2017 actual	2018 est.	2019 est.
Direct obligations:			
25.2 Other services from non-Federal sources .....		7	4
26.0 Supplies and materials .....	1	1	1
99.9 Total new obligations, unexpired accounts .....	1	8	5

#### ENERGY SECURITY AND INFRASTRUCTURE MODERNIZATION FUND

As authorized by section 404 of the Bipartisan Budget Act of 2015 (Public Law 114-74; 42 U.S.C. 6239 note), the Secretary of Energy shall drawdown and sell not to exceed \$300,000,000 of crude oil from the Strategic Petroleum Reserve in fiscal year 2019: Provided, That the proceeds from such drawdown and sale shall be deposited in this account during fiscal year 2019: Provided further, That such amounts shall remain available until expended for necessary expenses to carry out modernization activities for the Strategic Petroleum Reserve.

#### Special and Trust Fund Receipts (in millions of dollars)

Identification code 089-5615-0-2-274	2017 actual	2018 est.	2019 est.
0100 Balance, start of year .....			
Receipts:			
Current law:			
1130 Proceeds from Sale of Oil, Energy Security and Infrastructure Modernization Fund .....	323		300
2000 Total: Balances and receipts .....	323		300
Appropriations:			
Current law:			
2101 Energy Security and Infrastructure Modernization Fund .....	-323		-300
5099 Balance, end of year .....			

#### Program and Financing (in millions of dollars)

Identification code 089-5615-0-2-274	2017 actual	2018 est.	2019 est.
<b>Obligations by program activity:</b>			
0010 Energy security and infrastructure modernization .....	165	158	146
<b>Budgetary resources:</b>			
Unobligated balance:			
1000 Unobligated balance brought forward, Oct 1 .....		158	
Budget authority:			
Appropriations, discretionary:			
1101 Appropriation (special or trust fund) .....	323		300
1900 Budget authority (total) .....	323		300
1930 Total budgetary resources available .....	323	158	300

1941	Memorandum (non-add) entries:			
	Unexpired unobligated balance, end of year .....	158		154
<b>Change in obligated balance:</b>				
	Unpaid obligations:			
3000	Unpaid obligations, brought forward, Oct 1 .....	163		227
3010	New obligations, unexpired accounts .....	165	158	146
3020	Outlays (gross) .....	-2	-94	-169
3050	Unpaid obligations, end of year .....	163	227	204
	Memorandum (non-add) entries:			
3100	Obligated balance, start of year .....		163	227
3200	Obligated balance, end of year .....	163	227	204

#### Budget authority and outlays, net:

4000	Discretionary:			
	Budget authority, gross .....	323		300
	Outlays, gross:			
4010	Outlays from new discretionary authority .....	2		75
4011	Outlays from discretionary balances .....		94	94
4020	Outlays, gross (total) .....	2	94	169
4180	Budget authority, net (total) .....	323		300
4190	Outlays, net (total) .....	2	94	169

The Energy Security and Infrastructure Modernization Fund was established in Section 404 of the Bipartisan Budget Act of 2015 to finance modernization of the Strategic Petroleum Reserve (SPR). One billion dollars in crude oil sales will support Life Extension investments needed to ensure the SPR can maintain its operational readiness capability, meet its mission requirements, and operate in an environmentally responsible manner. This FY 2019 budget increment continues the four-year (2017–2020) financing structure of multi-year oil sales that support an effective modernization program for the SPR.

#### Object Classification (in millions of dollars)

Identification code 089-5615-0-2-274	2017 actual	2018 est.	2019 est.
Direct obligations:			
25.2 Other services from non-Federal sources .....	2		
25.4 Operation and maintenance of facilities .....	163	158	146
99.9 Total new obligations, unexpired accounts .....	165	158	146

#### ENERGY INFORMATION ADMINISTRATION

For Department of Energy expenses necessary in carrying out the activities of the Energy Information Administration, \$115,035,000, to remain available until expended.

Note.—A full-year 2018 appropriation for this account was not enacted at the time the budget was prepared; therefore, the budget assumes this account is operating under the Continuing Appropriations Act, 2018 (Division D of P.L. 115-56, as amended). The amounts included for 2018 reflect the annualized level provided by the continuing resolution.

#### Program and Financing (in millions of dollars)

Identification code 089-0216-0-1-276	2017 actual	2018 est.	2019 est.
<b>Obligations by program activity:</b>			
0001 Obligations by Program Activity .....	126	118	118
<b>Budgetary resources:</b>			
Unobligated balance:			
1000 Unobligated balance brought forward, Oct 1 .....	4		3
Budget authority:			
Appropriations, discretionary:			
1100 Appropriation .....	122	121	115
1930 Total budgetary resources available .....	126	121	118
Memorandum (non-add) entries:			
1941 Unexpired unobligated balance, end of year .....		3	

#### Change in obligated balance:

3000	Unpaid obligations:			
	Unpaid obligations, brought forward, Oct 1 .....	35	41	45
3010	New obligations, unexpired accounts .....	126	118	118
3020	Outlays (gross) .....	-120	-114	-116
3050	Unpaid obligations, end of year .....	41	45	47

ENERGY INFORMATION ADMINISTRATION—Continued  
Program and Financing—Continued

Identification code 089–0216–0–1–276	2017 actual	2018 est.	2019 est.
<b>Memorandum (non-add) entries:</b>			
3100 Obligated balance, start of year .....	35	41	45
3200 Obligated balance, end of year .....	41	45	47
<b>Budget authority and outlays, net:</b>			
<b>Discretionary:</b>			
4000 Budget authority, gross .....	122	121	115
<b>Outlays, gross:</b>			
4010 Outlays from new discretionary authority .....	86	85	80
4011 Outlays from discretionary balances .....	34	29	36
4020 Outlays, gross (total) .....	120	114	116
4180 Budget authority, net (total) .....	122	121	115
4190 Outlays, net (total) .....	120	114	116

The U.S. Energy Information Administration (EIA) is the statistical and analytical agency within the U.S. Department of Energy. EIA collects, analyzes, and disseminates independent and impartial energy information to promote sound policymaking, efficient markets, and public understanding of energy and its interaction with the economy and the environment. As the nation's premier source of energy information, EIA conducts a data collection program covering the full spectrum of energy sources, end uses, and energy flows; generates short- and long-term domestic and international energy projections; and performs timely, informative energy analyses. The FY 2019 budget request enables EIA to maintain recent program enhancements, continue core statistical and analysis activities, and invest in planned cybersecurity initiatives.

## Object Classification (in millions of dollars)

Identification code 089–0216–0–1–276	2017 actual	2018 est.	2019 est.
<b>Direct obligations:</b>			
<b>Personnel compensation:</b>			
11.1 Full-time permanent .....	39	39	39
11.3 Other than full-time permanent .....	1	1	1
11.9 Total personnel compensation .....	40	40	40
12.1 Civilian personnel benefits .....	12	12	12
23.3 Communications, utilities, and miscellaneous charges .....	4	4	4
25.1 Advisory and assistance services .....	54	48	48
25.2 Other services from non-Federal sources .....	1	1	1
25.3 Purchases of goods and services from Government accounts ....	7	7	7
25.7 Operation and maintenance of equipment .....	3	3	3
31.0 Equipment .....	5	3	3
99.9 Total new obligations, unexpired accounts .....	126	118	118

## Employment Summary

Identification code 089–0216–0–1–276	2017 actual	2018 est.	2019 est.
1001 Direct civilian full-time equivalent employment .....	335	375	370

## FEDERAL ENERGY REGULATORY COMMISSION

## SALARIES AND EXPENSES

*For necessary expenses of the Federal Energy Regulatory Commission to carry out the provisions of the Department of Energy Organization Act (42 U.S.C. 7101 et seq.), including services as authorized by 5 U.S.C. 3109, official reception and representation expenses not to exceed \$3,000, and the hire of passenger motor vehicles, \$369,900,000, to remain available until expended: Provided, That notwithstanding any other provision of law, not to exceed \$369,900,000 of revenues from fees and annual charges, and other services and collections in fiscal year 2019 shall be retained and used for expenses necessary in this account, and shall remain available until expended: Provided further, That the sum herein appropriated from the general fund shall be reduced as revenues are received during fiscal year 2019 so as to result in a final fiscal year 2019 appropriation from the general fund estimated at not more than \$0.*

Note.—A full-year 2018 appropriation for this account was not enacted at the time the budget was prepared; therefore, the budget assumes this account is operating under the Continuing

Appropriations Act, 2018 (Division D of P.L. 115–56, as amended). The amounts included for 2018 reflect the annualized level provided by the continuing resolution.

## Program and Financing (in millions of dollars)

Identification code 089–0212–0–1–276	2017 actual	2018 est.	2019 est.
<b>Obligations by program activity:</b>			
0801 Ensure Just and Reasonable Rates, Terms & Conditions .....	160	168	178
0802 Promote Safe, Reliable, Secure & Efficient Infrastructure .....	120	128	136
0803 Mission Support through Organizational Excellence .....	62	66	71
0900 Total new obligations, unexpired accounts .....	342	362	385
<b>Budgetary resources:</b>			
<b>Unobligated balance:</b>			
1000 Unobligated balance brought forward, Oct 1 .....	23	32	15
1021 Recoveries of prior year unpaid obligations .....	4	1	.....
1050 Unobligated balance (total) .....	27	33	15
<b>Budget authority:</b>			
<b>Spending authority from offsetting collections, discretionary:</b>			
1700 Collected .....	347	344	370
1930 Total budgetary resources available .....	374	377	385
<b>Memorandum (non-add) entries:</b>			
1941 Unexpired unobligated balance, end of year .....	32	15	.....
<b>Change in obligated balance:</b>			
<b>Unpaid obligations:</b>			
3000 Unpaid obligations, brought forward, Oct 1 .....	58	70	69
3010 New obligations, unexpired accounts .....	342	362	385
3020 Outlays (gross) .....	–326	–362	–414
3040 Recoveries of prior year unpaid obligations, unexpired .....	–4	–1	.....
3050 Unpaid obligations, end of year .....	70	69	40
<b>Memorandum (non-add) entries:</b>			
3100 Obligated balance, start of year .....	58	70	69
3200 Obligated balance, end of year .....	70	69	40
<b>Budget authority and outlays, net:</b>			
<b>Discretionary:</b>			
4000 Budget authority, gross .....	347	344	370
<b>Outlays, gross:</b>			
4010 Outlays from new discretionary authority .....	269	310	333
4011 Outlays from discretionary balances .....	57	52	81
4020 Outlays, gross (total) .....	326	362	414
<b>Offsets against gross budget authority and outlays:</b>			
<b>Offsetting collections (collected) from:</b>			
4034 Offsetting governmental collections .....	–347	–344	–370
4180 Budget authority, net (total) .....	.....	.....	.....
4190 Outlays, net (total) .....	–21	18	44
<b>Memorandum (non-add) entries:</b>			
5090 Unexpired unavailable balance, SOY: Offsetting collections .....	15	15	15
5092 Unexpired unavailable balance, EOY: Offsetting collections .....	15	15	15

The Federal Energy Regulatory Commission (Commission) regulates and oversees key interstate aspects of the electric power (including hydro-power), natural gas and oil pipeline industries. The Commission assists consumers in obtaining reliable, efficient and sustainable energy services at a reasonable cost through appropriate regulatory and market means. Regulated entities pay fees and charges sufficient to recover the Commission's full cost of operations.

*Ensure Just and Reasonable Rates, Terms, and Conditions.*—One of the Commission's fundamental statutory responsibilities is to ensure that rates, terms and conditions for wholesale sales and transmission of electric energy and for transportation of natural gas are just and reasonable and not unduly discriminatory or preferential. To fulfill this responsibility, the Commission uses a combination of market and regulatory means, complemented by oversight and enforcement measures. For example, the Commission seeks to improve the competitiveness of organized wholesale electric markets, which in turn encourages entry of new resources, spurs innovation and deployment of new technologies, improves operating performance, and exerts downward pressure on costs. Another example of the Commission's use of market and regulatory means in support of this goal is found in the Commission's requirements for public utility transmission providers to participate in an open and transparent regional transmission planning process. In addition, the Commission approves cost-based, and where appro-

priate, market-based rates for the interstate transportation of natural gas and oil on jurisdictional pipelines, and for the interstate transmission and wholesale sale of electric energy. The Commission also reviews proposed mergers and other transactions in the electric industry to ensure that these proposals will not harm the public interest.

Oversight, surveillance and enforcement are essential complements to the Commission's approach to ensure that rates, terms and conditions of service are just and reasonable and not unduly discriminatory or preferential. The Commission conducts compliance audits, issues publicly available audit reports, and engages in formal and informal outreach efforts to promote effective compliance programs. Audits are planned and prioritized using a risk-based approach in order to maximize the impact of the Commission's resources. The Commission also conducts public and non-public investigations of possible violations of the statutes, regulations, rules, orders, and tariffs administered by the Commission. These investigations often rely upon oversight and surveillance that employ sophisticated technology to monitor market behavior. When violations of sufficient seriousness are discovered, the Commission attempts to resolve the resulting investigation through settlement with appropriate sanctions and future compliance improvements before initiating further enforcement proceedings.

*Promote Safe, Reliable, Secure, and Efficient Infrastructure.*—The Commission plays an important role in the development of energy infrastructure that operates efficiently, safely and reliably. One aspect of the Commission's role in energy infrastructure development stems from siting authority that includes licensing non-Federal hydropower projects, certifying interstate natural gas pipelines and storage projects, authorizing liquefied natural gas (LNG) facilities, and, in certain circumstances, permitting electric transmission lines. Throughout all of these processes, the Commission's goal is to expedite application processing without compromising environmental responsibilities or public participation. The Commission encourages, and sometimes requires, project proponents to engage in early involvement with state and Federal agencies, Indian tribes, affected landowners and the public. Another aspect of the Commission's role in energy infrastructure development stems from the Commission's responsibility for the safety of LNG and non-Federal hydropower facilities throughout the entire life cycle of a project: design review, construction and operation. To meet this mandate, the Commission primarily relies on physical inspections of the facilities. The Commission continues to incorporate risk-informed decision making into its dam safety program. By doing so, the Commission is focusing its resources on those structures that pose the greatest risk to public safety.

The Commission also has an important role in protecting the reliability of the Nation's electric transmission grid. A Commission-certified Electric Reliability Organization (ERO) develops and enforces mandatory Reliability Standards, subject to the Commission's oversight and approval. The Reliability Standards address the planning and operation, as well as the cybersecurity and physical protection of the Nation's electric transmission grid. The Commission may also, upon its own motion or upon complaint, order the ERO to submit a proposed reliability standard or a modification of an existing reliability standard that addresses a specific reliability matter. To that end, the Commission incorporates performance data-driven, risk-informed decision making into its reliability oversight. In addition, the Commission works collaboratively with the governmental and private sectors to utilize state-of-the-art practices as necessary to address advanced cyber and physical security threats to jurisdictional energy infrastructure. The Commission works with the owners and operators of key critical infrastructure facilities to identify and share threat information, analyze system vulnerabilities, and assist with effective mitigation.

*Mission Support through Organizational Excellence.*—The public interest is best served when the Commission operates in an efficient, responsive and transparent manner. The Commission achieves this operational state by maintaining processes and providing services in accordance with governing statutes, authoritative guidance, and prevailing best practices. Facilitating understanding of how the Commission carries out its responsibilities

and maintaining public trust in the Commission are important components of the Commission's commitment to organizational excellence. Trust and understanding increase acceptance of Commission decisions. Through the use of the Commission's eLibrary and eSubscriptions web pages, the public can obtain extensive information concerning documents both submitted to and issued by the Commission. The Commission also manages several social media sites to promote transparency and open communication. More generally, the Commission prioritizes resource allocations and makes prudent investments to meet specific program activities and challenges. The Commission thus makes continued investments in its human capital, information technology (IT) resources, and physical infrastructure. The Commission allocates over two-thirds of its budget to directly cover the compensation costs of its employees on an annual basis. The Commission continues to focus its human capital efforts on the competencies and positions most affected by the potential loss of approximately 30 percent of its staff to retirement in the next five years. The Commission also will pursue a number of new projects that will advance priority IT initiatives. These projects will modernize core mission and support systems, expand existing data analytics and visualization capabilities, and improve the agency's cyber security posture. Through the successful execution of these projects, the Commission expects to maintain a cost-effective suite of IT products and services that will meet its near-term mission needs and provide a scalable platform to support future needs beyond 2020, while meeting applicable security mandates. The Commission is also undergoing a multi-year renovation effort within its headquarters building which commenced in FY 2018 and will conclude in FY 2021. The renovation project will enable the agency to realize significant space savings. The FY 2019 request includes increases of approximately \$16.7 million to continue the modernization effort.

#### Object Classification (in millions of dollars)

Identification code 089-0212-0-1-276	2017 actual	2018 est.	2019 est.
Reimbursable obligations:			
Personnel compensation:			
11.1 Full-time permanent .....	172	177	179
11.3 Other than full-time permanent .....	4	5	6
11.5 Other personnel compensation .....	3	3	4
11.9 Total personnel compensation .....	179	185	189
12.1 Civilian personnel benefits .....	58	60	63
21.0 Travel and transportation of persons .....	3	4	4
23.1 Rental payments to GSA .....	33	33	33
23.2 Rental payments to others .....	1	1	1
23.3 Communications, utilities, and miscellaneous charges .....	2	2	2
24.0 Printing and reproduction .....	2	2	2
25.1 Advisory and assistance services .....	9	10	9
25.2 Other services from non-Federal sources .....	12	12	10
25.3 Other goods and services from Federal sources .....	2	2	2
25.4 Operation and maintenance of facilities .....	2	2	2
25.7 Operation and maintenance of equipment .....	29	27	40
26.0 Supplies and materials .....	3	4	4
31.0 Equipment .....	7	8	5
32.0 Land and structures .....		9	19
99.0 Reimbursable obligations .....	342	361	385
99.5 Adjustment for rounding .....		1	
99.9 Total new obligations, unexpired accounts .....	342	362	385

#### Employment Summary

Identification code 089-0212-0-1-276	2017 actual	2018 est.	2019 est.
2001 Reimbursable civilian full-time equivalent employment .....	1,453	1,465	1,465

## CLEAN COAL TECHNOLOGY

## Program and Financing (in millions of dollars)

Identification code 089-0235-0-1-271	2017 actual	2018 est.	2019 est.
<b>Budgetary resources:</b>			
Unobligated balance:			
1000 Unobligated balance brought forward, Oct 1 .....	2	2	2
1930 Total budgetary resources available .....	2	2	2
Memorandum (non-add) entries:			
1941 Unexpired unobligated balance, end of year .....	2	2	2
4180 Budget authority, net (total) .....			
4190 Outlays, net (total) .....			

The Clean Coal Technology Program was established in the 1980s to perform commercial-scale demonstrations of advanced coal-based technologies. All projects have concluded and only closeout activities remain.

## ULTRA-DEEPWATER AND UNCONVENTIONAL NATURAL GAS AND OTHER PETROLEUM RESEARCH FUND

## Program and Financing (in millions of dollars)

Identification code 089-5523-0-2-271	2017 actual	2018 est.	2019 est.
<b>Budgetary resources:</b>			
Unobligated balance:			
1000 Unobligated balance brought forward, Oct 1 .....	1	1	1
1930 Total budgetary resources available .....	1	1	1
Memorandum (non-add) entries:			
1941 Unexpired unobligated balance, end of year .....	1	1	1
<b>Change in obligated balance:</b>			
Unpaid obligations:			
3000 Unpaid obligations, brought forward, Oct 1 .....	15	6	
3020 Outlays (gross) .....	-9	-6	
3050 Unpaid obligations, end of year .....	6		
Memorandum (non-add) entries:			
3100 Obligated balance, start of year .....	15	6	
3200 Obligated balance, end of year .....	6		
<b>Budget authority and outlays, net:</b>			
Mandatory:			
Outlays, gross:			
4101 Outlays from mandatory balances .....	9	6	
4180 Budget authority, net (total) .....			
4190 Outlays, net (total) .....	9	6	

The Energy Policy Act of 2005 (Public Law 109-58) created a mandatory Ultra-Deepwater and Unconventional Natural Gas and Other Petroleum Research program beginning in 2007. Subtitle J of Title IX of the Energy Policy Act of 2005 (42 U.S.C. 16371 et seq.) was repealed and all unobligated balances in this account were rescinded by the Bipartisan Budget Control Act of FY 2013.

## PAYMENTS TO STATES UNDER FEDERAL POWER ACT

## Special and Trust Fund Receipts (in millions of dollars)

Identification code 089-5105-0-2-806	2017 actual	2018 est.	2019 est.
0100 Balance, start of year .....			
Receipts:			
Current law:			
1110 Licenses under Federal Power Act from Public Lands and National Forests, Payment to States (37 1/2%) .....	4	4	5
2000 Total: Balances and receipts .....	4	4	5
Appropriations:			
Current law:			
2101 Payments to States under Federal Power Act .....	-4	-4	-5
5099 Balance, end of year .....			

## Program and Financing (in millions of dollars)

Identification code 089-5105-0-2-806	2017 actual	2018 est.	2019 est.
<b>Obligations by program activity:</b>			
0001 Payments to States under Federal Power Act (Direct) .....	4	4	5
0900 Total new obligations (object class 41.0) .....	4	4	5
<b>Budgetary resources:</b>			
Budget authority:			
Appropriations, mandatory:			
1201 Appropriation (special or trust fund) .....	4	4	5
1930 Total budgetary resources available .....	4	4	5
<b>Change in obligated balance:</b>			
Unpaid obligations:			
3000 Unpaid obligations, brought forward, Oct 1 .....	4		
3010 New obligations, unexpired accounts .....	4	4	5
3020 Outlays (gross) .....	-8	-4	-5
Memorandum (non-add) entries:			
3100 Obligated balance, start of year .....	4		
<b>Budget authority and outlays, net:</b>			
Mandatory:			
4090 Budget authority, gross .....	4	4	5
Outlays, gross:			
4100 Outlays from new mandatory authority .....	4	4	5
4101 Outlays from mandatory balances .....	4		
4110 Outlays, gross (total) .....	8	4	5
4180 Budget authority, net (total) .....	4	4	5
4190 Outlays, net (total) .....	8	4	5

The States are paid 37.5 percent of the receipts from licenses for occupancy and use of national forests and public lands within their boundaries issued by the Federal Energy Regulatory Commission (16 U.S.C. 810).

## NORTHEAST HOME HEATING OIL RESERVE

For Department of Energy expenses necessary for Northeast Home Heating Oil Reserve storage, operation, and management activities pursuant to the Energy Policy and Conservation Act (42 U.S.C. 6201 et seq.), \$10,000,000, to remain available until expended.

Note.—A full-year 2018 appropriation for this account was not enacted at the time the budget was prepared; therefore, the budget assumes this account is operating under the Continuing Appropriations Act, 2018 (Division D of P.L. 115-56, as amended). The amounts included for 2018 reflect the annualized level provided by the continuing resolution.

## Special and Trust Fund Receipts (in millions of dollars)

Identification code 089-5369-0-2-274	2017 actual	2018 est.	2019 est.
0100 Balance, start of year .....	1	1	1
2000 Total: Balances and receipts .....	1	1	1
5099 Balance, end of year .....	1	1	1

## Program and Financing (in millions of dollars)

Identification code 089-5369-0-2-274	2017 actual	2018 est.	2019 est.
<b>Obligations by program activity:</b>			
0001 NEHOR .....	10	7	10
0900 Total new obligations (object class 25.2) .....	10	7	10
<b>Budgetary resources:</b>			
Unobligated balance:			
1000 Unobligated balance brought forward, Oct 1 .....	7	4	4
Budget authority:			
Appropriations, discretionary:			
1100 Appropriation .....	7	7	10
1930 Total budgetary resources available .....	14	11	14
Memorandum (non-add) entries:			
1941 Unexpired unobligated balance, end of year .....	4	4	4
<b>Change in obligated balance:</b>			
Unpaid obligations:			
3000 Unpaid obligations, brought forward, Oct 1 .....	5	5	5
3010 New obligations, unexpired accounts .....	10	7	10

3020	Outlays (gross) .....	-10	-7	-10
3050	Unpaid obligations, end of year .....	5	5	5
	Memorandum (non-add) entries:			
3100	Obligated balance, start of year .....	5	5	5
3200	Obligated balance, end of year .....	5	5	5
<b>Budget authority and outlays, net:</b>				
	Discretionary:			
4000	Budget authority, gross .....	7	7	10
	Outlays, gross:			
4010	Outlays from new discretionary authority .....	1	6	8
4011	Outlays from discretionary balances .....	9	1	2
4020	Outlays, gross (total) .....	10	7	10
4180	Budget authority, net (total) .....	7	7	10
4190	Outlays, net (total) .....	10	7	10

The Northeast Home Heating Oil Reserve (NEHHOR) provides an emergency supply of home heating oil for the Northeast States during times of inventory shortages and significant threats to immediate supply. The FY 2019 budget continues to maintain a one million barrel inventory of ultra-low sulfur distillate, stored in Northeast commercial storage terminals (Groton, CT; Revere, MA; and Port Reading, NJ), to provide a short-term emergency supplement to the Northeast systems' commercial supply of heating oil. In FY 2019, the Department plans to reexamine the utility of continuing the reserve beyond the expiration of current storage contracts in early 2020.

#### NUCLEAR WASTE DISPOSAL

For Department of Energy expenses necessary for nuclear waste disposal activities to carry out the purposes of the Nuclear Waste Policy Act of 1982 (Public Law 97-425), as amended (the "NWP"), including the acquisition of any real property or facility construction, or expansion, and interim storage activities, \$90,000,000, to remain available until expended, and to be derived from the Nuclear Waste Fund: Provided, That of the funds made available in this Act for nuclear waste disposal and defense nuclear waste disposal activities, 1.62 percent shall be provided to the Office of the Attorney General of the State of Nevada solely for expenditures, other than salaries and expenses of State employees, to conduct scientific oversight responsibilities and participate in licensing activities pursuant to the NWP: Provided further, That of the funds made available in this Act for nuclear waste disposal and defense nuclear waste disposal activities, 2.91 percent shall be provided to affected units of local government, as defined in the NWP, to conduct appropriate activities and participate in licensing activities under section 116(c) of the NWP: Provided further, That of the amounts provided to affected units of local government, 7.5 percent shall be made available to affected units of local government in California with the balance made available to affected units of local government in Nevada for distribution as determined by the Nevada affected units of local government: Provided further, That of the funds made available in this Act for nuclear waste disposal and defense nuclear waste disposal activities, 0.16 percent shall be provided to the affected federally-recognized Indian tribes, as defined in the NWP, solely for expenditures, other than salaries and expenses of tribal employees, to conduct appropriate activities and participate in licensing activities under section 118(b) of the NWP: Provided further, That of the funds made available in this Act for nuclear waste disposal and defense nuclear waste disposal activities, 3.0 percent shall be provided to Nye County, Nevada, 0.05 percent shall be provided to Clark County, Nevada, and 0.46 percent shall be provided to the State of Nevada as payment equal to taxes under section 116(c)(3) of the NWP: Provided further, That within 90 days of the completion of each Federal fiscal year, the Office of the Attorney General of the State of Nevada, each affected federally-recognized Indian tribe, and each of the affected units of local government shall provide certification to the Department of Energy that all funds expended from such payments have been expended for activities authorized by the NWP and this Act: Provided further, That failure to provide such certification shall cause such entity to be prohibited from any further funding provided for similar activities: Provided further, That none of the funds herein appropriated may be: (1) used for litigation expenses; or (2) used to support multi-State efforts or other coalition building activities inconsistent with the restrictions contained in this Act: Provided further, That all proceeds and recoveries realized by the Secretary in carrying out activities authorized by the NWP, including but not limited to any proceeds from the sale of assets, shall be credited to this account, to remain available until expended, for carrying out the purposes of this account.

#### Special and Trust Fund Receipts (in millions of dollars)

Identification code 089-5227-0-2-271	2017 actual	2018 est.	2019 est.
0100 Balance, start of year .....	35,567	37,228	39,102
Receipts:			
Current law:			
1130 Nuclear Waste Disposal Fund .....	186	379	378
1140 Earnings on Investments, Nuclear Waste Disposal Fund .....	1,478	1,499	1,574
1199 Total current law receipts .....	1,664	1,878	1,952
1999 Total receipts .....	1,664	1,878	1,952
2000 Total: Balances and receipts .....	37,231	39,106	41,054
Appropriations:			
Current law:			
2101 Nuclear Waste Disposal .....			-90
2101 Salaries and Expenses .....			-48
2101 Salaries and Expenses .....	-4	-4	-4
2199 Total current law appropriations .....	-4	-4	-142
2999 Total appropriations .....	-4	-4	-142
5098 Rounding adjustment .....	1		
5099 Balance, end of year .....	37,228	39,102	40,912

#### Program and Financing (in millions of dollars)

Identification code 089-5227-0-2-271	2017 actual	2018 est.	2019 est.
<b>Obligations by program activity:</b>			
0001 Repository .....	4	9	90
<b>Budgetary resources:</b>			
Unobligated balance:			
1000 Unobligated balance brought forward, Oct 1 .....	13	9	
Budget authority:			
Appropriations, discretionary:			
1101 Appropriation (special or trust fund) .....			90
1930 Total budgetary resources available .....	13	9	90
Memorandum (non-add) entries:			
1941 Unexpired unobligated balance, end of year .....	9		
<b>Change in obligated balance:</b>			
Unpaid obligations:			
3000 Unpaid obligations, brought forward, Oct 1 .....	5	7	11
3010 New obligations, unexpired accounts .....	4	9	90
3020 Outlays (gross) .....	-2	-5	-40
3050 Unpaid obligations, end of year .....	7	11	61
Memorandum (non-add) entries:			
3100 Obligated balance, start of year .....	5	7	11
3200 Obligated balance, end of year .....	7	11	61
<b>Budget authority and outlays, net:</b>			
Discretionary:			
4000 Budget authority, gross .....			90
Outlays, gross:			
4010 Outlays from new discretionary authority .....			36
4011 Outlays from discretionary balances .....	2	5	4
4020 Outlays, gross (total) .....	2	5	40
4180 Budget authority, net (total) .....			90
4190 Outlays, net (total) .....	2	5	40
<b>Memorandum (non-add) entries:</b>			
5000 Total investments, SOY: Federal securities: Par value .....	52,424	53,013	53,602
5001 Total investments, EOY: Federal securities: Par value .....	53,013	53,602	54,200

The mission of the Yucca Mountain and Interim Storage programs is to fulfill the Federal Government's obligations to address nuclear waste in a safe and fiscally responsible way. With the resumption of the Yucca Mountain licensing process, the FY 2019 Budget proposes funding through two separate appropriation accounts, the Nuclear Waste Disposal and Defense Nuclear Waste Disposal appropriations. The overview narrative and detailed justification for the entire program, as supported by both accounts, is presented in the Nuclear Waste Disposal section of the FY 2019 Budget. The programs implement the Administration's decision to resume the Yucca Mountain license application process for disposal of spent nuclear fuel

## NUCLEAR WASTE DISPOSAL—Continued

(SNF) and high level waste (HLW) while establishing a robust interim storage capability.

The Yucca Mountain and Interim Storage programs are critical to enhancing the national and economic security goals of the Nation. The management of SNF and HLW must protect the health, safety of citizens and the environment in the United States. The Nation's commercial and defense SNF and HLW must be safely and permanently isolated to minimize the risk to human health and the environment. Effective management of these materials will ensure that our country remains competitive in the global economy, maintains national security, supports cleanup of weapons sites, continues operation of the U.S. Navy's nuclear-powered vessels, and advances our international non-proliferation goals.

## Object Classification (in millions of dollars)

Identification code 089-5227-0-2-271	2017 actual	2018 est.	2019 est.
Direct obligations:			
25.1 Advisory and assistance services .....	2	2	5
25.2 Other services from non-Federal sources .....	2	7	85
99.9 Total new obligations, unexpired accounts .....	4	9	90

## URANIUM SUPPLY AND ENRICHMENT ACTIVITIES

*The unappropriated receipts currently in the Uranium Supply and Enrichment Activities account shall be transferred to and merged with the Uranium Enrichment Decontamination and Decommissioning Fund and shall be available only to the extent provided in advance in appropriations Acts.*

## Special and Trust Fund Receipts (in millions of dollars)

Identification code 089-5226-0-2-271	2017 actual	2018 est.	2019 est.
0100 Balance, start of year .....	861	861	861
2000 Total: Balances and receipts .....	861	861	861
Appropriations:			
Current law:			
2101 Uranium Supply and Enrichment Activities .....			-861
5099 Balance, end of year .....	861	861	

## Program and Financing (in millions of dollars)

Identification code 089-5226-0-2-271	2017 actual	2018 est.	2019 est.
Budgetary resources:			
Budget authority:			
Appropriations, discretionary:			
1101 Appropriation (special or trust fund) .....			861
1120 Appropriations transferred to other acct [089-5231] .....			-861
4180 Budget authority, net (total) .....			
4190 Outlays, net (total) .....			

This account funded operations of the Department's uranium enrichment facilities for commercial sales prior to 1992. These facilities are now shut down and are significantly contaminated by decades of operations for defense and non-defense activities. Under the Energy Policy Act of 1992, the Uranium Enrichment Decontamination and Decommissioning (UED&D) Fund pays, subject to appropriation, the decontamination and decommissioning costs of the Department's gaseous diffusion plants in Tennessee, Ohio, and Kentucky. The Administration proposes to transfer the amount remaining in this account to the UED&D Fund due to higher-than-expected cleanup costs. Funding so transferred will be precluded from obligation until appropriated for the authorized purpose of the UED&D Fund.

## URANIUM ENRICHMENT DECONTAMINATION AND DECOMMISSIONING FUND

*For Department of Energy expenses necessary in carrying out uranium enrichment facility decontamination and decommissioning, remedial actions, and other activities of title II of the Atomic Energy Act of 1954, and title X, subtitle A, of the Energy*

*Policy Act of 1992, \$752,749,000, to be derived from the Uranium Enrichment Decontamination and Decommissioning Fund, to remain available until expended, of which \$30,000,000 shall be available in accordance with title X, subtitle A, of the Energy Policy Act of 1992.*

Note.—A full-year 2018 appropriation for this account was not enacted at the time the budget was prepared; therefore, the budget assumes this account is operating under the Continuing Appropriations Act, 2018 (Division D of P.L. 115-56, as amended). The amounts included for 2018 reflect the annualized level provided by the continuing resolution.

## Special and Trust Fund Receipts (in millions of dollars)

Identification code 089-5231-0-2-271	2017 actual	2018 est.	2019 est.
0100 Balance, start of year .....	2,282	2,119	1,946
Receipts:			
Current law:			
1140 Earnings on Investments, Decontamination and Decommissioning Fund .....	42	31	43
1140 General Fund Payment - Defense, Decontamination and Decommissioning Fund .....	563	559	
1199 Total current law receipts .....	605	590	43
1999 Total receipts .....	605	590	43
2000 Total: Balances and receipts .....	2,887	2,709	1,989
Appropriations:			
Current law:			
2101 Uranium Enrichment Decontamination and Decommissioning Fund .....	-768	-763	-753
2134 Uranium Enrichment Decontamination and Decommissioning Fund .....			861
2199 Total current law appropriations .....	-768	-763	108
2999 Total appropriations .....	-768	-763	108
5099 Balance, end of year .....	2,119	1,946	2,097

## Program and Financing (in millions of dollars)

Identification code 089-5231-0-2-271	2017 actual	2018 est.	2019 est.
Obligations by program activity:			
0001 Oak Ridge .....	197	193	151
0002 Paducah .....	205	204	203
0003 Portsmouth .....	315	313	348
0004 Pension and Community and Regulatory Support .....	21	23	21
0005 Title X Uranium/Thorium Reimbursement Program .....	30	30	30
0900 Total new obligations, unexpired accounts .....	768	763	753
Budgetary resources:			
Unobligated balance:			
1000 Unobligated balance brought forward, Oct 1 .....	11	12	12
1021 Recoveries of prior year unpaid obligations .....	1		
1050 Unobligated balance (total) .....	12	12	12
Budget authority:			
Appropriations, discretionary:			
1101 Appropriation (special or trust fund) .....	768	763	753
1121 Appropriations transferred from other acct [089-5226] .....			861
1134 Appropriations precluded from obligation .....			-861
1160 Appropriation, discretionary (total) .....	768	763	753
1711 Spending authority from offsetting collections, discretionary:			
Spending authority from offsetting collections transferred from other accounts [486-4054] .....			1,640
1725 Spending authority from offsetting collections precluded from obligation (limitation on obligations) .....			-1,640
1900 Budget authority (total) .....	768	763	753
1930 Total budgetary resources available .....	780	775	765
Memorandum (non-add) entries:			
1941 Unexpired unobligated balance, end of year .....	12	12	12
Change in obligated balance:			
Unpaid obligations:			
3000 Unpaid obligations, brought forward, Oct 1 .....	232	242	241
3010 New obligations, unexpired accounts .....	768	763	753
3020 Outlays (gross) .....	-757	-764	-780
3040 Recoveries of prior year unpaid obligations, unexpired .....	-1		
3050 Unpaid obligations, end of year .....	242	241	214
Memorandum (non-add) entries:			
3100 Obligated balance, start of year .....	232	242	241
3200 Obligated balance, end of year .....	242	241	214



<b>Budget authority and outlays, net:</b>				
Discretionary:				
4000	Budget authority, gross .....	768	763	753
Outlays, gross:				
4010	Outlays from new discretionary authority .....	591	534	527
4011	Outlays from discretionary balances .....	166	230	253
4020	Outlays, gross (total) .....	757	764	780
4180	Budget authority, net (total) .....	768	763	753
4190	Outlays, net (total) .....	757	764	780
<b>Memorandum (non-add) entries:</b>				
5000	Total investments, SOY: Federal securities: Par value .....	2,497	2,340	2,164
5001	Total investments, EOY: Federal securities: Par value .....	2,340	2,164	3,955

**Decontamination and Decommissioning Activities.**—Funds: 1) projects to decontaminate, decommission, and remediate the sites and facilities of the gaseous diffusion plants at Portsmouth, Ohio; Paducah, Kentucky; and East Tennessee Technology Park, Oak Ridge, Tennessee and; 2) pensions and post-retirement medical benefits for active and inactive gaseous diffusion plant workers.

**Uranium and Thorium Reimbursement Program.**—Provides reimbursement to uranium and thorium licensees for the Government's share of cleanup costs pursuant to Title X of the Energy Policy Act of 1992.

#### Object Classification (in millions of dollars)

Identification code 089–5231–0–2–271	2017 actual	2018 est.	2019 est.
Direct obligations:			
25.1	Advisory and assistance services .....	10	10
25.2	Other services from non-Federal sources .....	38	38
25.4	Operation and maintenance of facilities .....	678	673
32.0	Land and structures .....	39	39
41.0	Grants, subsidies, and contributions .....	3	3
99.9	Total new obligations, unexpired accounts .....	768	763

#### URANIUM SALES AND REMEDIATION

#### Program and Financing (in millions of dollars)

Identification code 089–5530–0–2–271	2017 actual	2018 est.	2019 est.
<b>Change in obligated balance:</b>			
Unpaid obligations:			
3000	Unpaid obligations, brought forward, Oct 1 .....	2	2
3050	Unpaid obligations, end of year .....	2	2
Memorandum (non-add) entries:			
3100	Obligated balance, start of year .....	2	2
3200	Obligated balance, end of year .....	2	2
4180	Budget authority, net (total) .....		
4190	Outlays, net (total) .....		

The Energy and Water Development Appropriations Act of 2006 provided the Department of Energy authority to barter, transfer, or sell uranium and to use any proceeds, without fiscal year limitation, to remediate contaminated uranium inventories held by the Secretary of Energy.

#### ISOTOPE PRODUCTION AND DISTRIBUTION PROGRAM FUND

#### Program and Financing (in millions of dollars)

Identification code 089–4180–0–3–271	2017 actual	2018 est.	2019 est.
<b>Obligations by program activity:</b>			
0801	Isotope Production and Distribution Reimbursable program .....	88	69
<b>Budgetary resources:</b>			
Unobligated balance:			
1000	Unobligated balance brought forward, Oct 1 .....	12	18
1021	Recoveries of prior year unpaid obligations .....	1	
1050	Unobligated balance (total) .....	13	18

Budget authority:			
Spending authority from offsetting collections, discretionary:			
1700	Collected .....	93	69
1930	Total budgetary resources available .....	106	87
Memorandum (non-add) entries:			
1941	Unexpired unobligated balance, end of year .....	18	18

#### Change in obligated balance:

Unpaid obligations:			
3000	Unpaid obligations, brought forward, Oct 1 .....	37	56
3010	New obligations, unexpired accounts .....	88	69
3020	Outlays (gross) .....	–68	–89
3040	Recoveries of prior year unpaid obligations, unexpired .....	–1	
3050	Unpaid obligations, end of year .....	56	36
Memorandum (non-add) entries:			
3100	Obligated balance, start of year .....	37	56
3200	Obligated balance, end of year .....	56	36

#### Budget authority and outlays, net:

Discretionary:			
4000	Budget authority, gross .....	93	69
Outlays, gross:			
4010	Outlays from new discretionary authority .....	28	69
4011	Outlays from discretionary balances .....	40	20
4020	Outlays, gross (total) .....	68	89
Offsets against gross budget authority and outlays:			
Offsetting collections (collected) from:			
4030	Federal sources .....	–29	–22
4033	Non-Federal sources .....	–64	–47
4040	Offsets against gross budget authority and outlays (total) ....	–93	–69
4080	Outlays, net (discretionary) .....	–25	20
4180	Budget authority, net (total) .....		
4190	Outlays, net (total) .....	–25	20

#### Object Classification (in millions of dollars)

Identification code 089–4180–0–3–271	2017 actual	2018 est.	2019 est.
Reimbursable obligations:			
25.2	Other services from non-Federal sources .....	8	8
25.4	Operation and maintenance of facilities .....	73	55
31.0	Equipment .....	2	2
32.0	Land and structures .....	1	
41.0	Grants, subsidies, and contributions .....	4	4
99.9	Total new obligations, unexpired accounts .....	88	69

#### ADVANCED TECHNOLOGY VEHICLES MANUFACTURING LOAN PROGRAM

#### (INCLUDING CANCELLATION OF FUNDS)

*For Department of Energy administrative expenses necessary in carrying out the Advanced Technology Vehicles Manufacturing Loan Program, \$1,000,000, to remain available until September 30, 2020: Provided, That the unobligated balances available from amounts appropriated for the cost of direct loans in section 129 of the Consolidated Security, Disaster Assistance, and Continuing Appropriations Act, 2009 (Public Law 110–329), are hereby permanently cancelled.*

Note.—A full-year 2018 appropriation for this account was not enacted at the time the budget was prepared; therefore, the budget assumes this account is operating under the Continuing Appropriations Act, 2018 (Division D of P.L. 115–56, as amended). The amounts included for 2018 reflect the annualized level provided by the continuing resolution.

#### Program and Financing (in millions of dollars)

Identification code 089–0322–0–1–272	2017 actual	2018 est.	2019 est.
<b>Obligations by program activity:</b>			
Credit program obligations:			
0706	Interest on reestimates of direct loan subsidy .....	103	
0709	Administrative expenses .....	5	4
0900	Total new obligations, unexpired accounts .....	5	107
<b>Budgetary resources:</b>			
Unobligated balance:			
1000	Unobligated balance brought forward, Oct 1 .....	4,296	4,339
1001	Discretionary unobligated balance brought fwd, Oct 1 .....		4,339
1021	Recoveries of prior year unpaid obligations .....	43	
1050	Unobligated balance (total) .....	4,339	4,339

ADVANCED TECHNOLOGY VEHICLES MANUFACTURING LOAN PROGRAM—Continued  
Program and Financing—Continued

Identification code 089-0322-0-1-272	2017 actual	2018 est.	2019 est.
Budget authority:			
Appropriations, discretionary:			
1100 Appropriation .....	5	5	1
1131 Unobligated balance of appropriations permanently reduced .....			-4,333
1160 Appropriation, discretionary (total) .....	5	5	-4,332
Appropriations, mandatory:			
1200 Appropriation .....		103	
1900 Budget authority (total) .....	5	108	-4,332
1930 Total budgetary resources available .....	4,344	4,447	8
Memorandum (non-add) entries:			
1941 Unexpired unobligated balance, end of year .....	4,339	4,340	5
<b>Change in obligated balance:</b>			
Unpaid obligations:			
3000 Unpaid obligations, brought forward, Oct 1 .....	46	2	1
3010 New obligations, unexpired accounts .....	5	107	3
3020 Outlays (gross) .....	-6	-108	-3
3040 Recoveries of prior year unpaid obligations, unexpired .....	-43		
3050 Unpaid obligations, end of year .....	2	1	1
Memorandum (non-add) entries:			
3100 Obligated balance, start of year .....	46	2	1
3200 Obligated balance, end of year .....	2	1	1
<b>Budget authority and outlays, net:</b>			
Discretionary:			
4000 Budget authority, gross .....	5	5	-4,332
Outlays, gross:			
4010 Outlays from new discretionary authority .....	1	2	1
4011 Outlays from discretionary balances .....	5	3	2
4020 Outlays, gross (total) .....	6	5	3
Mandatory:			
4090 Budget authority, gross .....		103	
Outlays, gross:			
4100 Outlays from new mandatory authority .....		103	
4180 Budget authority, net (total) .....	5	108	-4,332
4190 Outlays, net (total) .....	6	108	3

## Summary of Loan Levels, Subsidy Budget Authority and Outlays by Program (in millions of dollars)

Identification code 089-0322-0-1-272	2017 actual	2018 est.	2019 est.
Direct loan reestimates:			
135001 Direct Auto Loans .....	-15	29	
Administrative expense data:			
3510 Budget authority .....	5	5	1
3580 Outlays from balances .....	1	3	2
3590 Outlays from new authority .....	4	2	1

Section 136 of the Energy Independence and Security Act of 2007 established a direct loan program to support the development of advanced technology vehicles and associated components in the United States, known as the Advanced Technology Vehicles Manufacturing Loan Program (ATVM). The 2009 Continuing Resolution (CR), enacted on September 30, 2008, appropriated \$7.5 billion to support a maximum of \$25 billion in loans. ATVM provides loans to automobile and automobile part manufacturers for the cost of re-equipping, expanding, or establishing manufacturing facilities in the United States to produce advanced technology vehicles or qualified components and for associated engineering integration costs. This program is being eliminated in the FY 2019 Budget in accordance with Administration priorities, including the focusing of resources toward early-stage research and development. The Loan Programs Office will wind down operations in FY 2019 with the expectation that it will shut down in FY 2020 with remaining loan monitoring and closeout activities transferred to another office.

The Budget eliminates the ATVM Loan Program and proposes to cancel all remaining loan volume authority and appropriated credit subsidy. The Budget provides \$1,000,000 to cover loan portfolio monitoring and administrative expenses: including salaries for its full time employees as well as the cost of outside advisors for financial, legal, engineering, credit, and

market analysis. All activities not essential for the continued monitoring of the portfolio will be terminated.

## Object Classification (in millions of dollars)

Identification code 089-0322-0-1-272	2017 actual	2018 est.	2019 est.
Direct obligations:			
11.1 Personnel compensation: Full-time permanent .....	1		
12.1 Below threshold .....		1	1
25.1 Advisory and assistance services .....	2	2	1
25.3 Other goods and services from Federal sources .....	2	1	1
41.0 Grants, subsidies, and contributions .....		103	
99.9 Total new obligations, unexpired accounts .....	5	107	3

## Employment Summary

Identification code 089-0322-0-1-272	2017 actual	2018 est.	2019 est.
1001 Direct civilian full-time equivalent employment .....	10	4	3

ADVANCED TECHNOLOGY VEHICLES MANUFACTURING DIRECT LOAN FINANCING  
ACCOUNT

## Program and Financing (in millions of dollars)

Identification code 089-4579-0-3-272	2017 actual	2018 est.	2019 est.
<b>Obligations by program activity:</b>			
Credit program obligations:			
0713 Payment of interest to Treasury .....	1		
0715 Interest paid to FFB .....	95	60	46
0742 Downward reestimates paid to receipt accounts .....	14	74	
0743 Interest on downward reestimates .....	1		
0900 Total new obligations, unexpired accounts .....	111	134	46
<b>Budgetary resources:</b>			
Unobligated balance:			
1000 Unobligated balance brought forward, Oct 1 .....	164	101	58
1021 Recoveries of prior year unpaid obligations .....	1,040		
1023 Unobligated balances applied to repay debt .....	-101	-84	-46
1024 Unobligated balance of borrowing authority withdrawn .....	-1,040		
1050 Unobligated balance (total) .....	63	17	12
Financing authority:			
Borrowing authority, mandatory:			
1400 Borrowing authority .....	12		
Spending authority from offsetting collections, mandatory:			
1800 Collected .....	1,146	724	606
1801 Change in uncollected payments, Federal sources .....	-43		
1825 Spending authority from offsetting collections applied to repay debt .....	-966	-549	-545
1850 Spending auth from offsetting collections, mand (total) .....	137	175	61
1900 Budget authority (total) .....	149	175	61
1930 Total budgetary resources available .....	212	192	73
Memorandum (non-add) entries:			
1941 Unexpired unobligated balance, end of year .....	101	58	27
<b>Change in obligated balance:</b>			
Unpaid obligations:			
3000 Unpaid obligations, brought forward, Oct 1 .....	1,040		
3010 New obligations, unexpired accounts .....	111	134	46
3020 Outlays (gross) .....	-111	-134	-46
3040 Recoveries of prior year unpaid obligations, unexpired .....	-1,040		
Uncollected payments:			
3060 Uncollected pymts, Fed sources, brought forward, Oct 1 .....	-43		
3070 Change in uncollected pymts, Fed sources, unexpired .....	43		
Memorandum (non-add) entries:			
3100 Obligated balance, start of year .....	997		
<b>Financing authority and disbursements, net:</b>			
Mandatory:			
4090 Budget authority, gross .....	149	175	61
Financing disbursements:			
4110 Outlays, gross (total) .....	111	134	46
Offsets against gross financing authority and disbursements:			
Offsetting collections (collected) from:			
4120 Upward Reestimate .....		-103	
4122 Interest on uninvested funds .....	-3	-2	-1
4123 Non-Federal sources (interest) .....	-83	-56	-43

4123	Non-Federal sources (principal) .....	-1,060	-563	-562
4130	Offsets against gross budget authority and outlays (total) ....	-1,146	-724	-606
	Additional offsets against financing authority only (total):			
4140	Change in uncollected pymts, Fed sources, unexpired .....	43		
4160	Budget authority, net (mandatory) .....	-954	-549	-545
4170	Outlays, net (mandatory) .....	-1,035	-590	-560
4180	Budget authority, net (total) .....	-954	-549	-545
4190	Outlays, net (total) .....	-1,035	-590	-560

**Status of Direct Loans** (in millions of dollars)

Identification code 089-4579-0-3-272	2017 actual	2018 est.	2019 est.
Position with respect to appropriations act limitation on obligations:			
1121 Limitation available from carry-forward .....	17,719	17,719	
1143 Unobligated limitation carried forward (P.L. 110-329) (-) .....	-17,719	-17,719	
Cumulative balance of direct loans outstanding:			
1210 Outstanding, start of year .....	3,860	2,800	2,237
1251 Repayments: Repayments and prepayments .....	-1,060	-563	-562
1290 Outstanding, end of year .....	2,800	2,237	1,675

**Balance Sheet** (in millions of dollars)

Identification code 089-4579-0-3-272	2016 actual	2017 actual
<b>ASSETS:</b>		
Federal assets:		
1101 Fund balances with Treasury .....	121	100
Investments in US securities:		
1106 Receivables, net .....	7	111
Net value of assets related to post-1991 direct loans receivable:		
1401 Direct loans receivable, gross .....	3,860	2,800
1402 Interest receivable .....	4	3
1405 Allowance for subsidy cost (-) .....	-73	-90
1499 Net present value of assets related to direct loans .....	3,791	2,713
1999 Total assets .....	3,919	2,924
<b>LIABILITIES:</b>		
Federal liabilities:		
2101 Accounts payable .....	22	
2103 Debt .....	3,897	2,842
2105 Other .....		82
2999 Total liabilities .....	3,919	2,924
4999 Total upward reestimate subsidy BA [89-0322] .....	3,919	2,924

**TITLE 17 INNOVATIVE TECHNOLOGY LOAN GUARANTEE PROGRAM****(INCLUDING CANCELLATION OF FUNDS)**

Such sums as are derived from amounts received from borrowers pursuant to section 1702(b) of the Energy Policy Act of 2005 under this heading in prior Acts, shall be collected in accordance with section 502(7) of the Congressional Budget Act of 1974: Provided, That for necessary administrative expenses to carry out this Loan Guarantee program, \$10,000,000 is appropriated from fees collected in prior years pursuant to section 1702(h) of the Energy Policy Act of 2005 which are not otherwise appropriated, to remain available until September 30, 2020: Provided further, That if the amount in the previous proviso is not available from such fees, an amount for such purposes is also appropriated from the general fund so as to result in a total amount appropriated for such purpose of no more than \$10,000,000: Provided further, That fees collected pursuant to such section 1702(h) for fiscal year 2018 shall be credited as offsetting collections under this heading and shall not be available until appropriated: Provided further, That the Department of Energy shall not subordinate any loan obligation to other financing in violation of section 1702 of the Energy Policy Act of 2005 or subordinate any Guaranteed Obligation to any loan or other debt obligations in violation of section 609.10 of title 10, Code of Federal Regulations: Provided further, That the authority provided in prior year appropriations Acts for commitments to guarantee loans under title XVII of the Energy Policy Act of 2005, excluding amounts for loan guarantee commitments, as defined in the Federal Credit Reform Act of 1990 (2 U.S.C. 661a), made by October 1, 2018, is hereby permanently cancelled: Provided further, That of the unobligated balances from prior year appropriations available under this heading in the American Recovery and Reinvestment Act of 2009 (Public Law 111-5) for the cost to guarantee loans, \$383,433,000 is hereby permanently cancelled.

Note.—A full-year 2018 appropriation for this account was not enacted at the time the budget was prepared; therefore, the budget assumes this account is operating under the Continuing Appropriations Act, 2018 (Division D of P.L. 115-56, as amended). The amounts included for 2018 reflect the annualized level provided by the continuing resolution.

**Program and Financing** (in millions of dollars)

Identification code 089-0208-0-1-271	2017 actual	2018 est.	2019 est.
<b>Obligations by program activity:</b>			
Credit program obligations:			
0705 Reestimates of direct loan subsidy .....	8		
0706 Interest on reestimates of direct loan subsidy .....	4	1	
0709 Administrative expenses .....	25	25	24
0900 Total new obligations, unexpired accounts .....	37	26	24

**Budgetary resources:**

Unobligated balance:			
1000 Unobligated balance brought forward, Oct 1 .....	669	666	669
1001 Discretionary unobligated balance brought fwd, Oct 1 .....	669	666	
1021 Recoveries of prior year unpaid obligations .....	4		
1050 Unobligated balance (total) .....	673	666	669
Budget authority:			
Appropriations, discretionary:			
1100 Appropriation .....		13	
1131 Unobligated balance of appropriations permanently reduced .....	-19	-9	-383
1160 Appropriation, discretionary (total) .....	-19	4	-383
Appropriations, mandatory:			
1200 Appropriation .....	12	1	
Spending authority from offsetting collections, discretionary:			
1700 Collected .....	14	20	3
1702 Offsetting collections (previously unavailable) .....	37	24	10
1725 Spending authority from offsetting collections precluded from obligation (limitation on obligations) .....	-14	-20	-3
1750 Spending auth from offsetting collections, disc (total) .....	37	24	10
1900 Budget authority (total) .....	30	29	-373
1930 Total budgetary resources available .....	703	695	296
Memorandum (non-add) entries:			
1940 Unobligated balance expiring .....			-13
1941 Unexpired unobligated balance, end of year .....	666	669	259

**Change in obligated balance:**

Unpaid obligations:			
3000 Unpaid obligations, brought forward, Oct 1 .....	67	56	47
3010 New obligations, unexpired accounts .....	37	26	24
3020 Outlays (gross) .....	-44	-35	-34
3040 Recoveries of prior year unpaid obligations, unexpired .....	-4		
3050 Unpaid obligations, end of year .....	56	47	37
Memorandum (non-add) entries:			
3100 Obligated balance, start of year .....	67	56	47
3200 Obligated balance, end of year .....	56	47	37

**Budget authority and outlays, net:**

Discretionary:			
4000 Budget authority, gross .....	18	28	-373
Outlays, gross:			
4010 Outlays from new discretionary authority .....	10		
4011 Outlays from discretionary balances .....	22	34	34
4020 Outlays, gross (total) .....	32	34	34
Offsets against gross budget authority and outlays:			
Offsetting collections (collected) from:			
4033 Non-Federal sources .....	-14	-20	-3
4040 Offsets against gross budget authority and outlays (total) ....	-14	-20	-3
Mandatory:			
4090 Budget authority, gross .....	12	1	
Outlays, gross:			
4100 Outlays from new mandatory authority .....	12	1	
4180 Budget authority, net (total) .....	16	9	-376
4190 Outlays, net (total) .....	30	15	31

**Memorandum (non-add) entries:**

5090 Unexpired unavailable balance, SOY: Offsetting collections .....	47	24	20
5092 Unexpired unavailable balance, EOY: Offsetting collections .....	24	20	13

**TITLE 17 INNOVATIVE TECHNOLOGY LOAN GUARANTEE PROGRAM—Continued**  
**Summary of Loan Levels, Subsidy Budget Authority and Outlays by Program** (in millions of dollars)

Identification code 089–0208–0–1–271	2017 actual	2018 est.	2019 est.
Direct loan levels supportable by subsidy budget authority:			
115001 Section 1703 FFB Loans (Self Pay) .....		3,703	
115999 Total direct loan levels .....		3,703	
Direct loan subsidy (in percent):			
132001 Section 1703 FFB Loans (Self Pay) .....		–2.89	
132999 Weighted average subsidy rate .....		–2.89	
Direct loan subsidy budget authority:			
133001 Section 1703 FFB Loans (Self Pay) .....		–107	
133999 Total subsidy budget authority .....		–107	
Direct loan subsidy outlays:			
134001 Section 1703 FFB Loans (Self Pay) .....	–11	–66	–44
134002 Section 1705 FFB Loans .....		9	10
134999 Total subsidy outlays .....	–11	–57	–34
Direct loan reestimates:			
135001 Section 1703 FFB Loans (Self Pay) .....	10	–52	
135002 Section 1705 FFB Loans .....	–88	–196	
135999 Total direct loan reestimates .....	–78	–248	
Guaranteed loan subsidy outlays:			
234002 Section 1705 Loan Guarantees .....			9
234999 Total subsidy outlays .....			9
Guaranteed loan reestimates:			
235002 Section 1705 Loan Guarantees .....	–20	–9	
235999 Total guaranteed loan reestimates .....	–20	–9	

The Title XVII Innovative Technology Loan Guarantee Program (Title XVII), as authorized by the Energy Policy Act of 2005 and executed by the Department of Energy's (DOE) Loan Programs Office (LPO), encourages early commercial use of new or significantly improved technologies in energy projects. Projects supported by DOE loan guarantees must avoid, reduce, or sequester air pollutants or anthropogenic emissions of greenhouse gases; employ new or significantly improved technologies compared to commercial technologies in service in the United States at the time the guarantee is issued; and offer a reasonable prospect of repayment of the principal and interest on the guaranteed obligation. Section 1703 of the Act authorizes DOE to provide loan guarantees for innovative energy projects in categories including renewable energy systems, advanced nuclear facilities, coal gasification, carbon sequestration, energy efficiency, and various other types of projects. This program is being eliminated in the FY 2019 Budget in accordance with Administration priorities, including the focusing of resources toward early-stage research and development. The Loan Programs Office will wind down operations in FY 2019 with the expectation that it will shut down in FY 2020 with remaining loan monitoring and closeout activities transferred to another office.

The Budget eliminates the Title XVII program and proposes to cancel all remaining loan volume authority. In addition to \$10,000,000 in appropriation offset by \$3,000,000 in collections, the Loan Programs Office will utilize unobligated balances carried forward from prior year appropriations to cover loan portfolio monitoring and administrative expenses; including salaries for its full time employees as well as the cost of outside advisors for financial, legal, engineering, credit, and market analysis. All activities not essential for the continued monitoring of the portfolio will be terminated.

The American Reinvestment and Recovery Act of 2009 (Public Law 111–5) amended the program's authorizing statute and provided \$2.5 billion in credit subsidy for a temporary program to support loan guarantees for commercial or advanced renewable energy systems, electric power transmission systems, and leading edge biofuel projects. Authority for the temporary program to extend new loans expired September 30, 2011. Prior to expiration, DOE provided loan guarantees to 28 projects totaling over \$16 billion in loan volume. Four projects withdrew prior to any disbursement of funds. The Budget proposes to cancel \$383 million in unobligated credit subsidy while retaining \$96 million to cover the cost of potential modifications as determined in the national interest by Presidential waiver

from rescission under Sec 1306 of the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 (Pub. L 111–203).

**Object Classification** (in millions of dollars)

Identification code 089–0208–0–1–271	2017 actual	2018 est.	2019 est.
11.1 Direct obligations: Personnel compensation: Full-time permanent .....	12	12	10
11.9 Total personnel compensation .....	12	12	10
12.1 Civilian personnel benefits .....	4	4	3
13.0 Benefits for former personnel .....			4
21.0 Travel and transportation of persons .....		1	1
25.1 Advisory and assistance services .....	5	5	3
25.3 Other goods and services from Federal sources .....	3	1	1
25.4 Operation and maintenance of facilities .....		1	1
26.0 Supplies and materials .....		1	1
41.0 Grants, subsidies, and contributions .....	13	1	
99.9 Total new obligations, unexpired accounts .....	37	26	24

**Employment Summary**

Identification code 089–0208–0–1–271	2017 actual	2018 est.	2019 est.
1001 Direct civilian full-time equivalent employment .....	94	80	68

**TITLE 17 INNOVATIVE TECHNOLOGY DIRECT LOAN FINANCING ACCOUNT**

**Program and Financing** (in millions of dollars)

Identification code 089–4455–0–3–271	2017 actual	2018 est.	2019 est.
<b>Obligations by program activity:</b>			
Credit program obligations:			
0710 Direct loan obligations .....		3,703	
0713 Payment of interest to Treasury .....	10	15	19
0715 Interest paid to FFB .....	322	369	411
0740 Negative subsidy obligations .....		107	
0742 Downward reestimates paid to receipt accounts .....	74	216	
0743 Interest on downward reestimates .....	16	33	
0900 Total new obligations, unexpired accounts .....	422	4,443	430
<b>Budgetary resources:</b>			
Unobligated balance:			
1000 Unobligated balance brought forward, Oct 1 .....	1,086	1,032	838
1021 Recoveries of prior year unpaid obligations .....	19		
1023 Unobligated balances applied to repay debt .....	–359	–112	–136
1024 Unobligated balance of borrowing authority withdrawn .....	–19		
1050 Unobligated balance (total) .....	727	920	702
Financing authority:			
Borrowing authority, mandatory:			
1400 Borrowing authority .....	96	3,975	111
1422 Borrowing authority applied to repay debt .....	–3		
1440 Borrowing authority, mandatory (total) .....	93	3,975	111
Spending authority from offsetting collections, mandatory:			
1800 Collected .....	728	483	544
1801 Change in uncollected payments, Federal sources .....	–3	–9	–10
1825 Spending authority from offsetting collections applied to repay debt .....	–91	–88	–80
1850 Spending auth from offsetting collections, mand (total) .....	634	386	454
1900 Budget authority (total) .....	727	4,361	565
1930 Total budgetary resources available .....	1,454	5,281	1,267
Memorandum (non-add) entries:			
1941 Unexpired unobligated balance, end of year .....	1,032	838	837
<b>Change in obligated balance:</b>			
Unpaid obligations:			
3000 Unpaid obligations, brought forward, Oct 1 .....	3,075	2,770	4,639
3010 New obligations, unexpired accounts .....	422	4,443	430
3020 Outlays (gross) .....	–708	–2,574	–1,973
3040 Recoveries of prior year unpaid obligations, unexpired .....	–19		
3050 Unpaid obligations, end of year .....	2,770	4,639	3,096
Uncollected payments:			
3060 Uncollected pymts, Fed sources, brought forward, Oct 1 .....	–47	–44	–35
3070 Change in uncollected pymts, Fed sources, unexpired .....	3	9	10
3090 Uncollected pymts, Fed sources, end of year .....	–44	–35	–25

Memorandum (non-add) entries:				
3100	Obligated balance, start of year .....	3,028	2,726	4,604
3200	Obligated balance, end of year .....	2,726	4,604	3,071

**Financing authority and disbursements, net:**

Mandatory:				
4090	Budget authority, gross .....	727	4,361	565
Financing disbursements:				
4110	Outlays, gross (total) .....	708	2,574	1,973
Offsets against gross financing authority and disbursements:				
Offsetting collections (collected) from:				
4120	Payment from program account .....		-9	-10
4120	Upward reestimate .....	-8		
4120	Interest on reestimate .....	-4	-1	
4122	Interest on uninvested funds .....	-32	-52	-52
4123	Interest payments .....	-324	-267	-305
4123	Principal payments .....	-360	-154	-177
4130	Offsets against gross budget authority and outlays (total) ....	-728	-483	-544
Additional offsets against financing authority only (total):				
4140	Change in uncollected pymts, Fed sources, unexpired .....	3	9	10
4160	Budget authority, net (mandatory) .....	2	3,887	31
4170	Outlays, net (mandatory) .....	-20	2,091	1,429
4180	Budget authority, net (total) .....	2	3,887	31
4190	Outlays, net (total) .....	-20	2,091	1,429

**Status of Direct Loans (in millions of dollars)**

Identification code 089-4455-0-3-271				
Position with respect to appropriations act limitation on obligations:				
1121	Limitation available from carry-forward .....	26,125	26,125	
1143	Unobligated limitation carried forward (P.L. xx) (-) .....	-26,125	-22,422	
1150	Total direct loan obligations .....		3,703	
Cumulative balance of direct loans outstanding:				
1210	Outstanding, start of year .....	12,231	11,649	13,446
1231	Disbursements: Direct loan disbursements .....	275	1,874	1,498
1251	Repayments: Repayments and prepayments .....	-360	-154	-177
1261	Adjustments: Capitalized interest .....	36	77	104
1263	Write-offs for default: Direct loans .....	-533		
1290	Outstanding, end of year .....	11,649	13,446	14,871

**Balance Sheet (in millions of dollars)**

Identification code 089-4455-0-3-271				
ASSETS:				
Federal assets:				
1101	Fund balances with Treasury .....	1,040		990
Investments in US securities:				
1106	Receivables, net .....	111		8
Net value of assets related to post-1991 direct loans receivable:				
1401	Direct loans receivable, gross .....	12,231		11,649
1402	Interest receivable .....	68		67
1405	Allowance for subsidy cost (-) .....	-1,446		-739
1499	Net present value of assets related to direct loans .....	10,853		10,977
1999	Total assets .....	12,004		11,975
LIABILITIES:				
Federal liabilities:				
2101	Accounts payable .....	149		
2103	Debt .....	11,855		11,784
2105	Other .....			191
2999	Total liabilities .....	12,004		11,975
4999	Total liabilities and net position .....	12,004		11,975

**TRIBAL INDIAN ENERGY LOAN GUARANTEE PROGRAM***(INCLUDING CANCELLATION OF FUNDS)*

*Of the unobligated balances available under this heading for the cost of loan guarantees, \$8,500,000 are hereby permanently cancelled.*

**Program and Financing (in millions of dollars)**

Identification code 089-0350-0-1-271				
2017 actual      2018 est.      2019 est.				
<b>Obligations by program activity:</b>				
Credit program obligations:				
0709	Administrative expenses .....		1	
0900	Total new obligations, unexpired accounts (object class 25.1) .....		1	
<b>Budgetary resources:</b>				
Unobligated balance:				
1000	Unobligated balance brought forward, Oct 1 .....		9	17
Budget authority:				
Appropriations, discretionary:				
1100	Appropriation .....	9	9	
1131	Unobligated balance of appropriations permanently reduced .....			-9
1160	Appropriation, discretionary (total) .....	9	9	-9
1930	Total budgetary resources available .....	9	18	8
Memorandum (non-add) entries:				
1941	Unexpired unobligated balance, end of year .....	9	17	8
<b>Change in obligated balance:</b>				
Unpaid obligations:				
3010	New obligations, unexpired accounts .....		1	
3020	Outlays (gross) .....		-1	

<b>Budget authority and outlays, net:</b>				
Discretionary:				
4000	Budget authority, gross .....	9	9	-9
Outlays, gross:				
4011	Outlays from discretionary balances .....		1	
4180	Budget authority, net (total) .....	9	9	-9
4190	Outlays, net (total) .....		1	

Section 2602 of the Energy Policy Act of 1992, as amended by the Energy Policy Act of 2005, authorized a loan guarantee program at the Department of Energy to support energy development by Indian tribes. The program was first appropriated funding by the Consolidated Appropriations Act of 2017 which provided \$8,500,000 for the cost of loan guarantees and \$500,000 for the administrative expenses. Rules detailing how the program would be implemented have not been promulgated. The Budget eliminates the Tribal Indian Energy Loan Guarantee program and proposes to cancel the \$8,500,000 appropriated for the cost of loan guarantees.

**TITLE 17 INNOVATIVE TECHNOLOGY GUARANTEED LOAN FINANCING ACCOUNT****Program and Financing (in millions of dollars)**

Identification code 089-4577-0- -271				
2017 actual      2018 est.      2019 est.				
<b>Obligations by program activity:</b>				
Credit program obligations:				
0711	Default claim payments on principal .....		17	12
0712	Default claim payments on interest .....		4	4
0742	Downward reestimates paid to receipt accounts .....	16	8	
0743	Interest on downward reestimates .....	4	1	
0900	Total new obligations, unexpired accounts .....	20	30	16
<b>Budgetary resources:</b>				
Unobligated balance:				
1000	Unobligated balance brought forward, Oct 1 .....	167	151	127
Financing authority:				
Borrowing authority, mandatory:				
1400	Borrowing authority .....		4	3
Spending authority from offsetting collections, mandatory:				
1800	Collected .....	4	4	23
1801	Change in uncollected payments, Federal sources .....			-9
1825	Spending authority from offsetting collections applied to repay debt .....		-2	-4
1850	Spending auth from offsetting collections, mand (total) .....	4	2	10
1900	Budget authority (total) .....	4	6	13
1930	Total budgetary resources available .....	171	157	140
Memorandum (non-add) entries:				
1941	Unexpired unobligated balance, end of year .....	151	127	124

**TITLE 17 INNOVATIVE TECHNOLOGY GUARANTEED LOAN FINANCING**  
**ACCOUNT—Continued**  
**Program and Financing—Continued**

Identification code 089-4577-0--271	2017 actual	2018 est.	2019 est.
<b>Change in obligated balance:</b>			
Unpaid obligations:			
3010 New obligations, unexpired accounts .....	20	30	16
3020 Outlays (gross) .....	-20	-30	-16
Uncollected payments:			
3060 Uncollected pymts, Fed sources, brought forward, Oct 1 .....	-9	-9	-9
3070 Change in uncollected pymts, Fed sources, unexpired .....			9
3090 Uncollected pymts, Fed sources, end of year .....	-9	-9	
Memorandum (non-add) entries:			
3100 Obligated balance, start of year .....	-9	-9	-9
3200 Obligated balance, end of year .....	-9	-9	
<b>Financing authority and disbursements, net:</b>			
Mandatory:			
4090 Budget authority, gross .....	4	6	13
Financing disbursements:			
4110 Outlays, gross (total) .....	20	30	16
Offsets against gross financing authority and disbursements:			
Offsetting collections (collected) from:			
4120 Payment from program account .....			-9
4122 Interest on uninvested funds .....	-4	-4	-4
4123 Principal payments .....			-8
4123 Interest Payments .....			-2
4130 Offsets against gross budget authority and outlays (total) ....	-4	-4	-23
Additional offsets against financing authority only (total):			
4140 Change in uncollected pymts, Fed sources, unexpired .....			9
4160 Budget authority, net (mandatory) .....		2	-1
4170 Outlays, net (mandatory) .....	16	26	-7
4180 Budget authority, net (total) .....		2	-1
4190 Outlays, net (total) .....	16	26	-7

**Status of Guaranteed Loans (in millions of dollars)**

Identification code 089-4577-0--271	2017 actual	2018 est.	2019 est.
<b>Position with respect to appropriations act limitation on commitments:</b>			
2121 Limitation available from carry-forward .....			
2143 Uncommitted limitation carried forward .....			
2150 Total guaranteed loan commitments .....			
<b>Cumulative balance of guaranteed loans outstanding:</b>			
2210 Outstanding, start of year .....	2,937	2,770	2,649
2231 Disbursements of new guaranteed loans .....			93
2251 Repayments and prepayments .....	-167	-104	-111
2261 Adjustments: Terminations for default that result in loans receivable .....		-17	-12
2290 Outstanding, end of year .....	2,770	2,649	2,619
<b>Memorandum:</b>			
2299 Guaranteed amount of guaranteed loans outstanding, end of year .....	2,216	2,119	2,095
<b>Addendum:</b>			
Cumulative balance of defaulted guaranteed loans that result in loans receivable:			
2310 Outstanding, start of year .....			21
2331 Disbursements for guaranteed loan claims .....		17	12
2351 Repayments of loans receivable .....			-9
2364 Other adjustments, net .....		4	4
2390 Outstanding, end of year .....		21	28

**Balance Sheet (in millions of dollars)**

Identification code 089-4577-0--271	2016 actual	2017 actual
<b>ASSETS:</b>		
Federal assets:		
1101 Fund balances with Treasury .....	158	142
Investments in US securities:		
1106 Receivables, net .....		
1501 Net value of assets related to post-1991 acquired defaulted guaranteed loans receivable: Defaulted guaranteed loans receivable, gross .....		
1999 Total assets .....	158	142

**LIABILITIES:**

Federal liabilities:		
2101 Accounts payable .....	19	
2105 Other .....		8
2204 Non-Federal liabilities: Liabilities for loan guarantees .....	139	134
2999 Total liabilities .....	158	142
4999 Total liabilities and net position .....	158	142

**POWER MARKETING ADMINISTRATION**

*Federal Funds*

**OPERATION AND MAINTENANCE, ALASKA POWER ADMINISTRATION**

The Alaska Power Administration (APA) was created in 1967 by the Secretary of the Interior to assume the functions of the Bureau of Reclamation in Alaska. These functions include operations, maintenance, transmission, and power marketing of the two Federal hydroelectric projects (Eklutna and Snettisham), and the investigation of future water and power development programs. All Alaska activities of APA, including the Juneau headquarters office, were terminated on September 30, 1998. A fund maintained to liquidate the remaining obligations of the APA will expire in FY 2018.

**OPERATION AND MAINTENANCE, SOUTHEASTERN POWER ADMINISTRATION**

*For necessary expenses of operation and maintenance of power transmission facilities and of marketing electric power and energy, including transmission wheeling and ancillary services, pursuant to section 5 of the Flood Control Act of 1944 (16 U.S.C. 825s), as applied to the Southeastern Power Administration (Southeastern or SEPA) marketing area, \$6,500,000, including official reception and representation expenses in an amount not to exceed \$1,500, to remain available until expended: Provided, That notwithstanding 31 U.S.C. 3302 and section 5 of the Flood Control Act of 1944, up to \$6,500,000 collected by the Southeastern Power Administration from the sale of power and related services shall be credited to this account as discretionary offsetting collections, to remain available until expended for the sole purpose of funding the annual expenses of the Southeastern Power Administration: Provided further, That the sum herein appropriated for annual expenses shall be reduced as collections are received during the fiscal year so as to result in a final fiscal year 2019 appropriation estimated at not more than \$0: Provided further, That notwithstanding 31 U.S.C. 3302, up to \$59,360,000 collected by the Southeastern Power Administration pursuant to the Flood Control Act of 1944 to recover purchase power and wheeling expenses shall be credited to this account as offsetting collections, to remain available until expended for the sole purpose of making purchase power and wheeling expenditures: Provided further, That for purposes of this appropriation, annual expenses means expenditures that are generally recovered in the same year that they are incurred (excluding purchase power and wheeling expenses).*

Note.—A full-year 2018 appropriation for this account was not enacted at the time the budget was prepared; therefore, the budget assumes this account is operating under the Continuing Appropriations Act, 2018 (Division D of P.L. 115-56, as amended). The amounts included for 2018 reflect the annualized level provided by the continuing resolution.

**Program and Financing (in millions of dollars)**

Identification code 089-0302-0-1-271	2017 actual	2018 est.	2019 est.
<b>Obligations by program activity:</b>			
0801 Purchase Power and Wheeling .....	65	60	60
0802 Annual Expenses and other costs repaid in one year .....	6	6	6
0900 Total new obligations, unexpired accounts .....	71	66	66
<b>Budgetary resources:</b>			
Unobligated balance:			
1000 Unobligated balance brought forward, Oct 1 .....	30	21	21
Budget authority:			
Spending authority from offsetting collections, discretionary:			
1700 Collected .....	62	66	66
1900 Budget authority (total) .....	62	66	66
1930 Total budgetary resources available .....	92	87	87
Memorandum (non-add) entries:			
1941 Unexpired unobligated balance, end of year .....	21	21	21

Change in obligated balance:			
Unpaid obligations:			
3000	Unpaid obligations, brought forward, Oct 1 .....	10	8
3010	New obligations, unexpired accounts .....	71	66
3020	Outlays (gross) .....	-73	-71
			-66
3050	Unpaid obligations, end of year .....	8	3
	Memorandum (non-add) entries:		
3100	Obligated balance, start of year .....	10	8
3200	Obligated balance, end of year .....	8	3
			3

Budget authority and outlays, net:			
Discretionary:			
4000	Budget authority, gross .....	62	66
	Outlays, gross:		
4010	Outlays from new discretionary authority .....	39	63
4011	Outlays from discretionary balances .....	34	8
			3
4020	Outlays, gross (total) .....	73	71
	Offsets against gross budget authority and outlays:		
	Offsetting collections (collected) from:		
4033	Non-Federal sources .....	-62	-66
			-66
4040	Offsets against gross budget authority and outlays (total) ....	-62	-66
			-66
4180	Budget authority, net (total) .....		
4190	Outlays, net (total) .....	11	5

The Southeastern Power Administration (Southeastern) markets power generated at 22 U.S. Army Corps of Engineers' hydroelectric generating plants in an eleven-State area of the Southeast. Power deliveries are made by means of contracting for use of transmission facilities owned by others.

Southeastern sells wholesale power primarily to publicly and cooperatively owned electric distribution utilities. Southeastern does not own or operate any transmission facilities. Its long-term contracts provide for periodic electric rate adjustments to ensure that the Federal Government recovers the costs of operations and the capital invested in power facilities, with interest, in keeping with statutory requirements. As in past years, the budget continues to provide funding for annual expenses and purchase power and wheeling expenses through discretionary offsetting collections derived from power receipts collected to recover those expenses.

**Program Direction.**—Provision is made for negotiation and administration of transmission and power contracts, collection of revenues, accounting and budget activities, development of wholesale power rates, amortization of the Federal power investment, energy efficiency and competitiveness program, investigation and planning of proposed water resources projects, scheduling and dispatch of power generation, scheduling storage and release of water, administration of contractual operation requirements, and determination of methods of operating generating plants individually and in coordination with others to obtain maximum utilization of resources.

**Purchase Power and Wheeling.**—Provision is made for the payment of wheeling fees and for the purchase of electricity in connection with the disposal of power under contracts with utility companies. Customers are encouraged to use alternative funding mechanisms, including customer advances and net billing to finance these activities. Offsetting collections to fund these ongoing operating services are also available up to \$59 million in 2019.

**Reimbursable Program.**—The Consolidated Appropriations Act, 2008 (P.L. 110–161) provided Southeastern with authority to accept advance payment from customers for reimbursable work associated with operations and maintenance activities, consistent with those authorized in section 5 of the Flood Control Act of 1944. Funds received from any State, municipality, corporation, association, firm, district, or individual as an advance payment for reimbursable work will be credited to Southeastern's account and remain available until expended.

Object Classification (in millions of dollars)			
Identification code 089–0302–0–1–271	2017 actual	2018 est.	2019 est.
Reimbursable obligations:			
11.1	Personnel compensation: Full-time permanent .....	3	3
12.1	Civilian personnel benefits .....	1	1
25.2	Purchase Power and Wheeling .....	65	60
25.2	Other services from non-Federal sources .....	2	2

99.0	Reimbursable obligations .....	71	66	66
99.9	Total new obligations, unexpired accounts .....	71	66	66

### Employment Summary

Identification code 089–0302–0–1–271	2017 actual	2018 est.	2019 est.
1001 Direct civilian full-time equivalent employment .....	38	40	44

### CONTINUING FUND, SOUTHEASTERN POWER ADMINISTRATION

A continuing fund maintained from receipts from the sale and transmission of electric power in the Southeastern service area is available to defray emergency expenses necessary to ensure continuity of service (16 U.S.C. 825s–2). The fund was last activated in FY 2018 to finance power purchases associated with heightened demand and cost spikes due to severe cold weather. Consistent with sound business practices, the Southeastern Power Administration has implemented a policy to recover all emergency costs associated with purchased power and wheeling within one year from the time funds are expended.

### OPERATION AND MAINTENANCE, SOUTHWESTERN POWER ADMINISTRATION

*For necessary expenses of operation and maintenance of power transmission facilities and of marketing electric power and energy, for construction and acquisition of transmission lines, substations and appurtenant facilities, and for administrative expenses, including official reception and representation expenses in an amount not to exceed \$1,500 in carrying out section 5 of the Flood Control Act of 1944 (16 U.S.C. 825s), as applied to the Southwestern Power Administration, \$45,802,000, to remain available until expended: Provided, That notwithstanding 31 U.S.C. 3302 and section 5 of the Flood Control Act of 1944 (16 U.S.C. 825s), up to \$35,402,000 collected by the Southwestern Power Administration from the sale of power and related services shall be credited to this account as discretionary offsetting collections, to remain available until expended, for the sole purpose of funding the annual expenses of the Southwestern Power Administration: Provided further, That the sum herein appropriated for annual expenses shall be reduced as collections are received during the fiscal year so as to result in a final fiscal year 2019 appropriation estimated at not more than \$10,400,000: Provided further, That notwithstanding 31 U.S.C. 3302, up to \$83,000,000 collected by the Southwestern Power Administration pursuant to the Flood Control Act of 1944 to recover purchase power and wheeling expenses shall be credited to this account as offsetting collections, to remain available until expended for the sole purpose of making purchase power and wheeling expenditures: Provided further, That for purposes of this appropriation, annual expenses means expenditures that are generally recovered in the same year that they are incurred (excluding purchase power and wheeling expenses).*

Note.—A full-year 2018 appropriation for this account was not enacted at the time the budget was prepared; therefore, the budget assumes this account is operating under the Continuing Appropriations Act, 2018 (Division D of P.L. 115–56, as amended). The amounts included for 2018 reflect the annualized level provided by the continuing resolution.

### Program and Financing (in millions of dollars)

Identification code 089–0303–0–1–271	2017 actual	2018 est.	2019 est.
<b>Obligations by program activity:</b>			
0001	Systems operation and maintenance .....	5	3
0003	Construction .....	4	5
0004	Program direction .....	2	3
			4
0200	Direct program subtotal .....	11	11
			10
0799	Total direct obligations .....	11	11
0801	Annual expenses .....	36	33
0805	Purchase power and wheeling .....	14	10
0810	Other reimbursable activities .....	5	37
			34
0899	Total reimbursable obligations .....	55	80
			153
0900	Total new obligations, unexpired accounts .....	66	91
			163
<b>Budgetary resources:</b>			
Unobligated balance:			
1000	Unobligated balance brought forward, Oct 1 .....	98	100
			100

OPERATION AND MAINTENANCE, SOUTHWESTERN POWER ADMINISTRATION—Continued  
Program and Financing—Continued

Identification code 089-0303-0-1-271	2017 actual	2018 est.	2019 est.
Budget authority:			
Appropriations, discretionary:			
1100 Appropriation .....	11	11	10
Spending authority from offsetting collections, discretionary:			
1700 Collected .....	57	80	153
1900 Budget authority (total) .....	68	91	163
1930 Total budgetary resources available .....	166	191	263
Memorandum (non-add) entries:			
1941 Unexpired unobligated balance, end of year .....	100	100	100
Change in obligated balance:			
Unpaid obligations:			
3000 Unpaid obligations, brought forward, Oct 1 .....	87	85	69
3010 New obligations, unexpired accounts .....	66	91	163
3020 Outlays (gross) .....	-68	-107	-177
3050 Unpaid obligations, end of year .....	85	69	55
Memorandum (non-add) entries:			
3100 Obligated balance, start of year .....	87	85	69
3200 Obligated balance, end of year .....	85	69	55
Budget authority and outlays, net:			
Discretionary:			
4000 Budget authority, gross .....	68	91	163
Outlays, gross:			
4010 Outlays from new discretionary authority .....	28	87	159
4011 Outlays from discretionary balances .....	40	20	18
4020 Outlays, gross (total) .....	68	107	177
Offsets against gross budget authority and outlays:			
Offsetting collections (collected) from:			
4030 Federal sources .....		-6	-6
4033 Non-Federal sources .....	-57	-74	-147
4040 Offsets against gross budget authority and outlays (total) ....	-57	-80	-153
4070 Budget authority, net (discretionary) .....	11	11	10
4080 Outlays, net (discretionary) .....	11	27	24
4180 Budget authority, net (total) .....	11	11	10
4190 Outlays, net (total) .....	11	27	24

The Southwestern Power Administration (Southwestern) operates in a six-state area marketing and delivering renewable hydroelectric power produced at the U.S. Army Corps of Engineers' dams. Southwestern operates and maintains 1,380 miles of high voltage transmission lines, 26 substations/switching stations, associated power system controls, and communication sites. Southwestern also makes modifications and constructs additions to existing facilities.

Southwestern markets and delivers its power at wholesale rates primarily to public bodies and rural electric cooperatives. In compliance with statutory requirements, Southwestern's power sales contracts provide for periodic rate adjustments to ensure that the Federal Government recovers all costs of operations, other costs allocated to power, and the capital investments in power facilities, with interest. Southwestern is also responsible for scheduling and dispatching power and negotiating power sales contracts to meet changing customer load requirements. As in past years, the budget continues to provide funding for annual expenses and purchase power and wheeling expenses through discretionary offsetting collections derived from power receipts collected to recover those expenses.

**Program Direction.**—Provides compensation and all related expenses for personnel who market, deliver, operate, and maintain Southwestern's high-voltage interconnected power system and associated facilities.

**Operations and Maintenance.**—Provides essential electrical and communications equipment replacements and upgrades, capitalized moveable equipment, technical services, and supplies and materials necessary for the safe, reliable, and cost effective operation and maintenance of the power system.

**Purchase Power and Wheeling.**—Provides for the purchase and delivery of energy to meet limited peaking power contractual obligations. Federal power receipts and alternative financing methods, including net billing, bill crediting, and customer advances are used to fund system-purchased

power support and other contractual services. Customers will provide other power resources and/or purchases for the remainder of their firm loads.

**Construction.**—Provides for replacement, addition or upgrade of existing infrastructure to sustain reliable delivery of power to its customers, contain annual maintenance costs, and improve overall efficiency.

**Reimbursable Program.**—This activity involves services provided by Southwestern to others under various types of reimbursable arrangements.

## Object Classification (in millions of dollars)

Identification code 089-0303-0-1-271	2017 actual	2018 est.	2019 est.
11.1 Direct obligations: Personnel compensation: Full-time permanent .....	2	2	2
11.9 Total personnel compensation .....	2	2	2
25.2 Other services from non-Federal sources .....	7	7	6
26.0 Supplies and materials .....	1	1	1
31.0 Equipment .....	1	1	1
99.0 Direct obligations .....	11	11	10
99.0 Reimbursable obligations .....	55	80	153
99.9 Total new obligations, unexpired accounts .....	66	91	163

## Employment Summary

Identification code 089-0303-0-1-271	2017 actual	2018 est.	2019 est.
1001 Direct civilian full-time equivalent employment .....	10	10	10
2001 Reimbursable civilian full-time equivalent employment .....	164	184	184

## OPERATION AND MAINTENANCE, SOUTHWESTERN POWER ADMINISTRATION

(Legislative proposal, subject to PAYGO)

This proposal would authorize the Federal government to sell the transmission assets of the Southwestern Power Administration, which operates and maintains 1,380 miles of high voltage transmission lines and 26 substations/switching stations.

## CONTINUING FUND, SOUTHWESTERN POWER ADMINISTRATION

## Program and Financing (in millions of dollars)

Identification code 089-5649-0-2-271	2017 actual	2018 est.	2019 est.
4180 Budget authority, net (total) .....			
4190 Outlays, net (total) .....			
Memorandum (non-add) entries:			
5080 Outstanding debt, SOY .....	-68	-68	-68
5081 Outstanding debt, EOY .....	-68	-68	-68

A continuing fund, maintained from receipts from the sale and transmission of electric power in the Southwestern service area, is available permanently for emergency expenses necessary to ensure continuity of electric service and continuous operation of the facilities. The fund is also available on an ongoing basis to pay for purchase power and wheeling expenses when the Administrator determines that such expenses are necessary to meet contractual obligations for the sale and delivery of power during periods of below-average generation (16 U.S.C. 825s-1 as amended further by Public Law 101-101). The fund was last activated in FY 2009 to repair and replace damaged transmission lines due to an ice storm.

## CONSTRUCTION, REHABILITATION, OPERATION AND MAINTENANCE, WESTERN AREA POWER ADMINISTRATION

For carrying out the functions authorized by title III, section 302(a)(1)(E) of the Act of August 4, 1977 (42 U.S.C. 7152), and other related activities including conservation and renewable resources programs as authorized, \$265,142,000, including official reception and representation expenses in an amount not to exceed \$1,500, to remain available until expended, of which \$265,142,000 shall be derived from the Department of the Interior Reclamation Fund: Provided, That notwithstanding 31 U.S.C. 3302, section 5 of the Flood Control Act of 1944 (16 U.S.C. 825s), and



section 1 of the Interior Department Appropriation Act, 1939 (43 U.S.C. 392a), up to \$175,770,000 collected by the Western Area Power Administration from the sale of power and related services shall be credited to this account as discretionary offsetting collections, to remain available until expended, for the sole purpose of funding the annual expenses of the Western Area Power Administration: Provided further, That the sum herein appropriated for annual expenses shall be reduced as collections are received during the fiscal year so as to result in a final fiscal year 2019 appropriation estimated at not more than \$89,372,000, of which \$89,372,000 is derived from the Reclamation Fund: Provided further, That notwithstanding 31 U.S.C. 3302, up to \$306,408,000 collected by the Western Area Power Administration pursuant to the Flood Control Act of 1944 and the Reclamation Project Act of 1939 to recover purchase power and wheeling expenses shall be credited to this account as offsetting collections, to remain available until expended for the sole purpose of making purchase power and wheeling expenditures: Provided further, That for purposes of this appropriation, annual expenses means expenditures that are generally recovered in the same year that they are incurred (excluding purchase power and wheeling expenses).

Note.—A full-year 2018 appropriation for this account was not enacted at the time the budget was prepared; therefore, the budget assumes this account is operating under the Continuing Appropriations Act, 2018 (Division D of P.L. 115–56, as amended). The amounts included for 2018 reflect the annualized level provided by the continuing resolution.

#### Program and Financing (in millions of dollars)

Identification code 089–5068–0–2–271		2017 actual	2018 est.	2019 est.
<b>Obligations by program activity:</b>				
0001	Systems operation and maintenance .....	40	49	43
0004	Program direction .....	38	41	41
0091	Direct Program by Activities - Subtotal (1 level) .....	78	90	84
0100	Total operating expenses .....	78	90	84
0101	Capital investment .....	18	18	5
0799	Total direct obligations .....	96	108	89
0802	Purchase Power and Wheeling .....	160	179	306
0803	Annual Expenses .....	215	178	176
0804	Other Reimbursable .....	203	643	595
0809	Reimbursable program activities, subtotal .....	578	1,000	1,077
0899	Total reimbursable obligations .....	578	1,000	1,077
0900	Total new obligations, unexpired accounts .....	674	1,108	1,166
<b>Budgetary resources:</b>				
Unobligated balance:				
1000	Unobligated balance brought forward, Oct 1 .....	622	569	557
1021	Recoveries of prior year unpaid obligations .....	2		
1050	Unobligated balance (total) .....	624	569	557
Budget authority:				
Appropriations, discretionary:				
1100	Appropriation .....	7	7	
1101	Appropriation (special or trust fund) .....	88	90	89
1133	Unobligated balance of appropriations temporarily reduced .....	–1	–1	
1160	Appropriation, discretionary (total) .....	94	96	89
Spending authority from offsetting collections, discretionary:				
1700	Collected .....	543	1,000	1,077
1701	Change in uncollected payments, Federal sources .....	–18		
1750	Spending auth from offsetting collections, disc (total) .....	525	1,000	1,077
1900	Budget authority (total) .....	619	1,096	1,166
1930	Total budgetary resources available .....	1,243	1,665	1,723
Memorandum (non-add) entries:				
1941	Unexpired unobligated balance, end of year .....	569	557	557
<b>Change in obligated balance:</b>				
Unpaid obligations:				
3000	Unpaid obligations, brought forward, Oct 1 .....	281	277	505
3010	New obligations, unexpired accounts .....	674	1,108	1,166
3020	Outlays (gross) .....	–676	–880	–901
3040	Recoveries of prior year unpaid obligations, unexpired .....	–2		
3050	Unpaid obligations, end of year .....	277	505	770
Uncollected payments:				
3060	Uncollected pymts, Fed sources, brought forward, Oct 1 .....	–54	–36	–36
3070	Change in uncollected pymts, Fed sources, unexpired .....	18		
3090	Uncollected pymts, Fed sources, end of year .....	–36	–36	–36
Memorandum (non-add) entries:				
3100	Obligated balance, start of year .....	227	241	469

3200	Obligated balance, end of year .....	241	469	734
<b>Budget authority and outlays, net:</b>				
Discretionary:				
4000	Budget authority, gross .....	619	1,096	1,166
Outlays, gross:				
4010	Outlays from new discretionary authority .....	113	343	363
4011	Outlays from discretionary balances .....	563	537	538
4020	Outlays, gross (total) .....	676	880	901
Offsets against gross budget authority and outlays:				
Offsetting collections (collected) from:				
4030	Federal sources .....	–139	–258	–200
4033	Non-Federal sources .....	–404	–742	–877
4040	Offsets against gross budget authority and outlays (total) ....	–543	–1,000	–1,077
Additional offsets against gross budget authority only:				
4050	Change in uncollected pymts, Fed sources, unexpired .....	18		
4070	Budget authority, net (discretionary) .....	94	96	89
4080	Outlays, net (discretionary) .....	133	–120	–176
4180	Budget authority, net (total) .....	94	96	89
4190	Outlays, net (total) .....	133	–120	–176
<b>Memorandum (non-add) entries:</b>				
5080	Outstanding debt, SOY .....	–12,980	–12,980	–12,980
5081	Outstanding debt, EOY .....	–12,980	–12,980	–12,980

The Western Area Power Administration (WAPA) markets electric power in 15 central and western states from federally owned power plants operated primarily by the Bureau of Reclamation, the Army Corps of Engineers, and the International Boundary and Water Commission. WAPA operates and maintains about 17,000 circuit-miles of high-voltage transmission lines, more than 300 substations/switchyards and associated power system controls, and communication and electrical facilities for 15 separate power projects. WAPA also constructs additions and modifications to existing facilities.

In keeping with statutory requirements, WAPA's long-term power contracts allow for periodic rate adjustments to ensure that the Federal Government recovers costs of operations, other costs allocated to power, and the capital investment in power facilities, with interest.

Power is sold to wholesale customers such as municipalities, cooperatives, irrigation districts, public utility districts, State and Federal Government agencies, and private utilities. Receipts are deposited in the Reclamation Fund, the Falcon and Amistad Operating and Maintenance Fund, the General Fund, the Colorado River Dam Fund, and the Colorado River Basins Power Marketing Fund.

As in past years, the budget continues to provide funding for annual expenses and purchase power and wheeling expenses through discretionary offsetting collections derived from power receipts collected to recover those expenses.

**Systems Operation and Maintenance.**—Provides essential electrical and communication equipment replacements and upgrades, capitalized moveable equipment, technical services, and supplies and materials necessary for safe reliable operation and cost-effective maintenance of the power systems.

**Purchase Power and Wheeling.**—Provision is made for the payment of wheeling fees and for the purchase of electricity in connection with the distribution of power under contracts with utility companies. Customers are encouraged to contract for power and wheeling on their own, or use alternative funding mechanisms, including customer advances, net billing, and bill crediting to finance these activities. Ongoing operating services are also available on a reimbursable basis.

**System Construction.**—WAPA's construction and rehabilitation activity emphasizes replacement and upgrades of existing infrastructure to sustain reliable power delivery to its customers, to contain annual maintenance costs, and to improve overall operational efficiency. WAPA will continue to participate in joint construction projects with customers to encourage more widespread transmission access.

**Program Direction.**—Provides compensation and all related expenses for the workforce that operates and maintains WAPA's high-voltage interconnected transmission system (systems operation and maintenance program), and those that plan, design, and supervise the construction of replace-

CONSTRUCTION, REHABILITATION, OPERATION AND MAINTENANCE, WESTERN AREA  
POWER ADMINISTRATION—Continued

ments, upgrades, and additions (system construction program) to the transmission facilities.

**Reimbursable Program.**—This program involves services provided by WAPA to others under various types of reimbursable arrangements. WAPA will continue to spend out of the Colorado River Dam Fund for operations and maintenance activities associated with the Boulder Canyon Project via a reimbursable arrangement with the Interior Department's Bureau of Reclamation. The Colorado River Dam Fund is a revolving fund operated by the Bureau of Reclamation. Authority for WAPA to obligate directly from the Colorado River Dam Fund comes from section 104(a) of the Hoover Power Plant Act of 1984.

**Object Classification** (in millions of dollars)

Identification code 089-5068-0-2-271	2017 actual	2018 est.	2019 est.
Direct obligations:			
Personnel compensation:			
11.1 Full-time permanent .....	14	22	23
11.5 Other personnel compensation .....	3	3	3
11.9 Total personnel compensation .....	17	25	26
12.1 Civilian personnel benefits .....	5	6	.....
21.0 Travel and transportation of persons .....	2	2	2
22.0 Transportation of things .....	1	1	.....
23.1 Rental payments to GSA .....	.....	.....	1
23.3 Communications, utilities, and miscellaneous charges .....	.....	2	.....
25.1 Advisory and assistance services .....	7	2	7
25.2 Other services from non-Federal sources .....	10	11	3
25.7 Operation and maintenance of equipment .....	.....	.....	1
26.0 Supplies and materials .....	1	2	2
31.0 Equipment .....	16	24	26
32.0 Land and structures .....	37	33	21
99.0 Direct obligations .....	96	108	89
99.0 Reimbursable obligations .....	578	1,000	1,077
99.9 Total new obligations, unexpired accounts .....	674	1,108	1,166

**Employment Summary**

Identification code 089-5068-0-2-271	2017 actual	2018 est.	2019 est.
1001 Direct civilian full-time equivalent employment .....	149	172	161
2001 Reimbursable civilian full-time equivalent employment .....	998	1,050	1,049

CONSTRUCTION, REHABILITATION, OPERATION AND MAINTENANCE, WESTERN AREA  
POWER ADMINISTRATION

(Legislative proposal, subject to PAYGO)

This proposal would authorize the Federal government to sell the transmission assets of the Western Area Power Administration, which operates and maintains about 17,000 circuit-miles of high voltage transmission lines and more than 300 substations/switching yards.

## WESTERN AREA POWER ADMINISTRATION, BORROWING AUTHORITY, RECOVERY ACT.

**Program and Financing** (in millions of dollars)

Identification code 089-4404-0-3-271	2017 actual	2018 est.	2019 est.
<b>Obligations by program activity:</b>			
0102 Transmission Infrastructure Program Projects .....	.....	1,185	1,025
0811 Western Area Power Administration, Borrowing Authority, Recovery (Reimbursable) .....	8	35	48
0900 Total new obligations, unexpired accounts .....	8	1,220	1,073
<b>Budgetary resources:</b>			
Unobligated balance:			
1000 Unobligated balance brought forward, Oct 1 .....	12	12	12
1001 Discretionary unobligated balance brought fwd, Oct 1 .....	12	12	.....
Budget authority:			
Borrowing authority, mandatory:			
1400 Borrowing authority .....	21	1,185	1,025
1422 Borrowing authority applied to repay debt .....	-21	.....	.....
1440 Borrowing authority, mandatory (total) .....	.....	1,185	1,025

1700 Spending authority from offsetting collections, discretionary:			
Collected .....	4	31	43
1800 Spending authority from offsetting collections, mandatory:			
Collected .....	4	4	355
1825 Spending authority from offsetting collections applied to repay debt .....	.....	.....	-350
1850 Spending auth from offsetting collections, mand (total) .....	4	4	5
1900 Budget authority (total) .....	8	1,220	1,073
1930 Total budgetary resources available .....	20	1,232	1,085
Memorandum (non-add) entries:			
1941 Unexpired unobligated balance, end of year .....	12	12	12

**Change in obligated balance:**

Unpaid obligations:			
3000 Unpaid obligations, brought forward, Oct 1 .....	25	25	805
3010 New obligations, unexpired accounts .....	8	1,220	1,073
3020 Outlays (gross) .....	-8	-440	-865
3050 Unpaid obligations, end of year .....	25	805	1,013
Memorandum (non-add) entries:			
3100 Obligated balance, start of year .....	25	25	805
3200 Obligated balance, end of year .....	25	805	1,013

**Budget authority and outlays, net:**

Discretionary:			
4000 Budget authority, gross .....	4	31	43
Outlays, gross:			
4010 Outlays from new discretionary authority .....	.....	31	43
4011 Outlays from discretionary balances .....	5	.....	.....
4020 Outlays, gross (total) .....	5	31	43
Offsets against gross budget authority and outlays:			
Offsetting collections (collected) from:			
4030 Federal sources .....	-3	-3	-3
4033 Non-Federal sources .....	-1	-28	-40
4040 Offsets against gross budget authority and outlays (total) ....	-4	-31	-43
4080 Outlays, net (discretionary) .....	1	.....	.....
Mandatory:			
4090 Budget authority, gross .....	4	1,189	1,030
Outlays, gross:			
4100 Outlays from new mandatory authority .....	.....	389	230
4101 Outlays from mandatory balances .....	3	20	592
4110 Outlays, gross (total) .....	3	409	822
Offsets against gross budget authority and outlays:			
Offsetting collections (collected) from:			
4123 Non-Federal sources .....	-4	-4	-355
4180 Budget authority, net (total) .....	.....	1,185	675
4190 Outlays, net (total) .....	.....	405	467

**Summary of Budget Authority and Outlays** (in millions of dollars)

	2017 actual	2018 est.	2019 est.
Enacted/requested:			
Budget Authority .....	.....	1,185	675
Outlays .....	.....	405	467
Legislative proposal, subject to PAYGO:			
Budget Authority .....	.....	.....	-675
Outlays .....	.....	.....	-450
Total:			
Budget Authority .....	.....	1,185	.....
Outlays .....	.....	405	17

The American Recovery and Reinvestment Act of 2009 (the Act) provided Western Area Power Administration (WAPA) borrowing authority for the purpose of constructing, financing, facilitating, planning, operating, maintaining, or studying construction of new or upgraded electric power transmission lines and related facilities with at least one terminus within the area served by WAPA, and for delivering or facilitating the delivery of power generated by renewable energy resources. This authority to borrow from the United States Treasury is available to WAPA on a permanent, indefinite basis, with the amount of borrowing outstanding not to exceed \$3.25 billion at any one time. WAPA established the Transmission Infrastructure Program (TIP) to manage and administer this borrowing authority and its related program requirements.

**Object Classification** (in millions of dollars)

Identification code 089-4404-0-3-271	2017 actual	2018 est.	2019 est.
33.0 Direct obligations: Investments and loans .....		1,185	1,025
99.0 Direct obligations .....		1,185	1,025
Reimbursable obligations:			
11.1 Personnel compensation: Full-time permanent .....	1	2	2
25.1 Advisory and assistance services .....		7	2
25.2 Other services from non-Federal sources .....	4	4	39
43.0 Interest and dividends .....	3	22	5
99.0 Reimbursable obligations .....	8	35	48
99.9 Total new obligations, unexpired accounts .....	8	1,220	1,073

**Employment Summary**

Identification code 089-4404-0-3-271	2017 actual	2018 est.	2019 est.
2001 Reimbursable civilian full-time equivalent employment .....	11	19	18

**WESTERN AREA POWER ADMINISTRATION, BORROWING AUTHORITY, RECOVERY ACT.**  
(Legislative proposal, subject to PAYGO)

**Program and Financing** (in millions of dollars)

Identification code 089-4404-4-3-271	2017 actual	2018 est.	2019 est.
<b>Budgetary resources:</b>			
Budget authority:			
Borrowing authority, mandatory:			
1400 Borrowing authority .....			-1,025
Spending authority from offsetting collections, mandatory:			
1800 Collected .....			-350
1825 Spending authority from offsetting collections applied to repay debt .....			350
1900 Budget authority (total) .....			-1,025
1930 Total budgetary resources available .....			-1,025
Memorandum (non-add) entries:			
1941 Unexpired unobligated balance, end of year .....			-1,025
<b>Change in obligated balance:</b>			
Unpaid obligations:			
3020 Outlays (gross) .....			800
3050 Unpaid obligations, end of year .....			800
Memorandum (non-add) entries:			
3200 Obligated balance, end of year .....			800
<b>Budget authority and outlays, net:</b>			
Mandatory:			
4090 Budget authority, gross .....			-1,025
Outlays, gross:			
4100 Outlays from new mandatory authority .....			-225
4101 Outlays from mandatory balances .....			-575
4110 Outlays, gross (total) .....			-800
Offsets against gross budget authority and outlays:			
Offsetting collections (collected) from:			
4123 Non-Federal sources .....			350
4180 Budget authority, net (total) .....			-675
4190 Outlays, net (total) .....			-450

This proposal would repeal Western Area Power Administration (WAPA)'s emergency borrowing authority authorized by the American Recovery and Reinvestment Act of 2009 for the purpose of constructing and/or funding projects within WAPA's service territory that deliver or facilitate the delivery of power generated by renewable energy resources.

**EMERGENCY FUND, WESTERN AREA POWER ADMINISTRATION****Program and Financing** (in millions of dollars)

Identification code 089-5069-0-2-271	2017 actual	2018 est.	2019 est.
<b>Budgetary resources:</b>			
Unobligated balance:			
1000 Unobligated balance brought forward, Oct 1 .....	1	1	1
1930 Total budgetary resources available .....	1	1	1

## Memorandum (non-add) entries:

1941 Unexpired unobligated balance, end of year .....	1	1	1
4180 Budget authority, net (total) .....			
4190 Outlays, net (total) .....			

## Memorandum (non-add) entries:

5080 Outstanding debt, SOY .....	-55	-55	-55
5081 Outstanding debt, EOY .....	-55	-55	-55

An emergency fund maintained from receipts from the sale and transmission of electric power is available to defray expenses necessary to ensure continuity of service. The fund was last activated in fiscal year 2010 to repair and replace damaged transmission lines due to severe winter storm conditions. This work has since been completed.

**FALCON AND AMISTAD OPERATING AND MAINTENANCE FUND**

For operation, maintenance, and emergency costs for the hydroelectric facilities at the Falcon and Amistad Dams, \$5,207,000, to remain available until expended, and to be derived from the Falcon and Amistad Operating and Maintenance Fund of the Western Area Power Administration, as provided in section 2 of the Act of June 18, 1954 (68 Stat. 255): Provided, That notwithstanding the provisions of that Act and of 31 U.S.C. 3302, up to \$4,979,000 collected by the Western Area Power Administration from the sale of power and related services from the Falcon and Amistad Dams shall be credited to this account as discretionary offsetting collections, to remain available until expended for the sole purpose of funding the annual expenses of the hydroelectric facilities of these Dams and associated Western Area Power Administration activities: Provided further, That the sum herein appropriated for annual expenses shall be reduced as collections are received during the fiscal year so as to result in a final fiscal year 2019 appropriation estimated at not more than \$228,000: Provided further, That for purposes of this appropriation, annual expenses means expenditures that are generally recovered in the same year that they are incurred: Provided further, That for fiscal year 2019, the Administrator of the Western Area Power Administration may accept up to \$122,000 in funds contributed by United States power customers of the Falcon and Amistad Dams for deposit into the Falcon and Amistad Operating and Maintenance Fund, and such funds shall be available for the purpose for which contributed in like manner as if said sums had been specifically appropriated for such purpose: Provided further, That any such funds shall be available without further appropriation and without fiscal year limitation for use by the Commissioner of the United States Section of the International Boundary and Water Commission for the sole purpose of operating, maintaining, repairing, rehabilitating, replacing, or upgrading the hydroelectric facilities at these Dams in accordance with agreements reached between the Administrator, Commissioner, and the power customers.

Note.—A full-year 2018 appropriation for this account was not enacted at the time the budget was prepared; therefore, the budget assumes this account is operating under the Continuing Appropriations Act, 2018 (Division D of P.L. 115-56, as amended). The amounts included for 2018 reflect the annualized level provided by the continuing resolution.

**Special and Trust Fund Receipts** (in millions of dollars)

Identification code 089-5178-0-2-271	2017 actual	2018 est.	2019 est.
0100 Balance, start of year .....	7	9	11
Receipts:			
Current law:			
1130 Falcon and Amistad Operating and Maintenance Fund Receipts .....	2	2	2
2000 Total: Balances and receipts .....	9	11	13
5099 Balance, end of year .....	9	11	13

**Program and Financing** (in millions of dollars)

Identification code 089-5178-0-2-271	2017 actual	2018 est.	2019 est.
<b>Obligations by program activity:</b>			
0801 Reimbursable program activity - Annual expenses .....	4	4	5
0802 Reimbursable program activity - Alternative Financing .....		1	
0900 Total new obligations (object class 25.3) .....	4	5	5
<b>Budgetary resources:</b>			
Budget authority:			
Spending authority from offsetting collections, discretionary:			
1700 Offsetting collections .....	4	5	5

FALCON AND AMISTAD OPERATING AND MAINTENANCE FUND—Continued  
Program and Financing—Continued

Identification code 089-5178-0-2-271	2017 actual	2018 est.	2019 est.
1930 Total budgetary resources available .....	4	5	5
<b>Change in obligated balance:</b>			
Unpaid obligations:			
3000 Unpaid obligations, brought forward, Oct 1 .....	9	9	8
3010 New obligations, unexpired accounts .....	4	5	5
3020 Outlays (gross) .....	-4	-6	-7
3050 Unpaid obligations, end of year .....	9	8	6
Memorandum (non-add) entries:			
3100 Obligated balance, start of year .....	9	9	8
3200 Obligated balance, end of year .....	9	8	6
<b>Budget authority and outlays, net:</b>			
Discretionary:			
4000 Budget authority, gross .....	4	5	5
Outlays, gross:			
4010 Outlays from new discretionary authority .....		3	3
4011 Outlays from discretionary balances .....	4	3	4
4020 Outlays, gross (total) .....	4	6	7
Offsets against gross budget authority and outlays:			
Offsetting collections (collected) from:			
4033 Non-Federal sources .....	-4	-5	-5
4180 Budget authority, net (total) .....			
4190 Outlays, net (total) .....		1	2

Pursuant to section 2 of the Act of June 18, 1954, as amended, Western Area Power Administration is requesting funding for the Falcon and Amistad Operating and Maintenance Fund to defray operations, maintenance, and emergency (OM&E) expenses for the hydroelectric facilities at Falcon and Amistad Dams on the Rio Grande River. Most of these funds will be made available to the United States Section of the International Boundary and Water Commission through a reimbursable agreement. Within the fund, \$200,000 is for an emergency reserve that will remain unobligated unless unanticipated expenses arise. The budget provides funding for annual expenses through discretionary offsetting collections derived from power receipts collected to recover those expenses.

COLORADO RIVER BASINS POWER MARKETING FUND, WESTERN AREA POWER  
ADMINISTRATION

## Program and Financing (in millions of dollars)

Identification code 089-4452-0-3-271	2017 actual	2018 est.	2019 est.
<b>Obligations by program activity:</b>			
0801 Program direction .....	62	58	63
0802 Equipment, Contracts and Related Expenses .....	80	127	157
0900 Total new obligations, unexpired accounts .....	142	185	220
<b>Budgetary resources:</b>			
Unobligated balance:			
1000 Unobligated balance brought forward, Oct 1 .....	133	124	124
Budget authority:			
Spending authority from offsetting collections, discretionary:			
1700 Collected .....	133	208	243
1720 Capital transfer of spending authority from offsetting collections to general fund .....		-23	-23
1750 Spending auth from offsetting collections, disc (total) .....	133	185	220
1930 Total budgetary resources available .....	266	309	344
Memorandum (non-add) entries:			
1941 Unexpired unobligated balance, end of year .....	124	124	124
<b>Change in obligated balance:</b>			
Unpaid obligations:			
3000 Unpaid obligations, brought forward, Oct 1 .....	44	43	37
3010 New obligations, unexpired accounts .....	142	185	220
3020 Outlays (gross) .....	-143	-191	-195
3050 Unpaid obligations, end of year .....	43	37	62
Uncollected payments:			
3060 Uncollected pymts, Fed sources, brought forward, Oct 1 .....	-1	-1	-1

3090 Uncollected pymts, Fed sources, end of year .....	-1	-1	-1
Memorandum (non-add) entries:			
3100 Obligated balance, start of year .....	43	42	36
3200 Obligated balance, end of year .....	42	36	61

## Budget authority and outlays, net:

Discretionary:			
4000 Budget authority, gross .....	133	185	220
Outlays, gross:			
4010 Outlays from new discretionary authority .....	39	41	49
4011 Outlays from discretionary balances .....	104	150	146
4020 Outlays, gross (total) .....	143	191	195
Offsets against gross budget authority and outlays:			
Offsetting collections (collected) from:			
4030 Federal sources .....	-6	-5	-5
4033 Non-Federal sources .....	-127	-203	-238
4040 Offsets against gross budget authority and outlays (total) ....	-133	-208	-243
4070 Budget authority, net (discretionary) .....		-23	-23
4080 Outlays, net (discretionary) .....	10	-17	-48
4180 Budget authority, net (total) .....		-23	-23
4190 Outlays, net (total) .....	10	-17	-48

Western Area Power Administration's (WAPA) operation and maintenance (O&M) and power marketing expenses for the Colorado River Storage Project, the Seedskaadee Project, the Dolores Project, the Olmsted Replacement Project, and the Fort Peck Project are financed from power revenues.

**Colorado River Storage Project.**—WAPA markets power and operates and maintains the power transmission facilities of the Colorado River Storage Project consisting of four major storage units: Glen Canyon on the Colorado River in Arizona, Flaming Gorge on the Green River in Utah, Navajo on the San Juan River in New Mexico, and the Wayne N. Aspinall unit on the Gunnison River in Colorado.

**Seedskaadee Project.**—This project includes WAPA's expenses for O&M, power marketing, and transmission of hydroelectric power from the Fontenelle Dam power plant in southwestern Wyoming.

**Dolores Project.**—This project includes WAPA's expenses for O&M, power marketing, and transmission of hydroelectric power from power plants at McPhee Dam and Towaoc Canal in southwestern Colorado.

**Fort Peck Project.**—Revenues collected by WAPA are used to defray operation and maintenance and power marketing expenses associated with the power generation and transmission facilities of the Fort Peck Project, and WAPA operates and maintains the transmission system and performs power marketing functions.

**Olmsted Replacement Project.**—This project includes WAPA's expenses for power marketing of hydroelectric power from the Olmsted Power Plant in Northern Utah.

**Equipment, Contracts and Related Expenses.**—WAPA operates and maintains approximately 4,000 miles of transmission lines, substations, switchyards, communications, and control equipment associated with this fund. Wholesale power is provided to utilities over interconnected high-voltage transmission systems. In keeping with statutory requirements, long-term power contracts provide for periodic rate adjustments to ensure that the Federal Government recovers all costs of O&M, and all capital invested in power, with interest. This activity provides for the supplies, materials, services, capital equipment replacements, and additions, including communications and control equipment, purchase power, transmission and wheeling services, and interest payments to the U.S. Treasury.

**Program Direction.**—The personnel compensation and related expenses for all these activities are quantified under Program Direction.

## Object Classification (in millions of dollars)

Identification code 089-4452-0-3-271	2017 actual	2018 est.	2019 est.
Reimbursable obligations:			
Personnel compensation:			
11.1 Full-time permanent .....	29	28	29
11.5 Other personnel compensation .....	3	3	3
11.9 Total personnel compensation .....	32	31	32
12.1 Civilian personnel benefits .....	11	11	12
21.0 Travel and transportation of persons .....	2	2	3

22.0	Transportation of things .....	1	1	1
23.1	Rental payments to GSA .....	1	1	1
23.3	Communications, utilities, and miscellaneous charges .....	1	1	2
25.1	Advisory and assistance services .....	7	6	7
25.2	Other services from non-Federal sources .....	60	88	92
25.3	Other goods and services from Federal sources .....	11	14	22
26.0	Supplies and materials .....	3	3	3
31.0	Equipment .....	4	8	20
32.0	Land and structures .....	9	15	20
43.0	Interest and dividends .....	.....	4	5
99.9	Total new obligations, unexpired accounts .....	142	185	220

**Employment Summary**

Identification code 089-4452-0-3-271	2017 actual	2018 est.	2019 est.
2001 Reimbursable civilian full-time equivalent employment .....	289	280	293

**BONNEVILLE POWER ADMINISTRATION FUND**

*Expenditures from the Bonneville Power Administration Fund, established pursuant to Public Law 93-454, are approved for official reception and representation expenses in an amount not to exceed \$5,000: Provided, That during fiscal year 2019, no new direct loan obligations may be made.*

Note.—A full-year 2018 appropriation for this account was not enacted at the time the budget was prepared; therefore, the budget assumes this account is operating under the Continuing Appropriations Act, 2018 (Division D of P.L. 115-56, as amended). The amounts included for 2018 reflect the annualized level provided by the continuing resolution.

**Program and Financing** (in millions of dollars)

Identification code 089-4045-0-3-271	2017 actual	2018 est.	2019 est.
<b>Obligations by program activity:</b>			
0801 Power business line .....	1,467	1,102	1,099
0802 Residential exchange .....	219	316	318
0803 Bureau of Reclamation .....	148	165	163
0804 Corp of Engineers .....	247	256	256
0805 Colville settlement .....	17	23	23
0806 U.S. Fish & Wildlife .....	26	33	33
0807 Planning council .....	11	12	12
0808 Fish and Wildlife .....	255	277	277
0809 Reimbursable program activities, subtotal .....	2,390	2,184	2,181
0811 Transmission business line .....	473	509	513
0812 Conservation and energy efficiency .....	150	165	165
0813 Interest .....	272	240	251
0814 Pension and health benefits .....	27	30	31
0819 Reimbursable program activities, subtotal .....	922	944	960
0821 Power business line .....	207	243	265
0822 Transmission services .....	297	466	489
0824 Fish and Wildlife .....	5	51	44
0825 Capital Equipment .....	11	27	27
0826 Projects funded in advance .....	141	42	41
0827 Capitalized Bond Premiums .....	.....	2	2
0829 Reimbursable program activities, subtotal .....	661	831	868
0900 Total new obligations, unexpired accounts .....	3,973	3,959	4,009

**Budgetary resources:**

Unobligated balance:			
1000 Unobligated balance brought forward, Oct 1 .....	13	11	643
1023 Unobligated balances applied to repay debt .....	.....	.....	-632
1050 Unobligated balance (total) .....	13	11	11
Budget authority:			
Borrowing authority, mandatory:			
1400 Borrowing authority .....	250	788	827
Contract authority, mandatory:			
1600 Contract authority .....	2,945	.....	.....
Spending authority from offsetting collections, mandatory:			
1800 Collected .....	3,525	3,986	3,986
1801 Change in uncollected payments, Federal sources .....	17	.....	.....
1802 Offsetting collections (previously unavailable) .....	9	10	10
1810 Spending authority from offsetting collections transferred to other accounts [096-3123] .....	-115	.....	.....
1823 New and/or unobligated balance of spending authority from offsetting collections temporarily reduced .....	-10	-10	.....
1825 Spending authority from offsetting collections applied to repay debt .....	.....	-183	-408

1826 Spending authority from offsetting collections applied to liquidate contract authority .....	-2,650	.....	.....
1850 Spending auth from offsetting collections, mand (total) .....	776	3,803	3,588
1900 Budget authority (total) .....	3,971	4,591	4,415
1930 Total budgetary resources available .....	3,984	4,602	4,426
Memorandum (non-add) entries:			
1941 Unexpired unobligated balance, end of year .....	11	643	417

**Change in obligated balance:**

Unpaid obligations:			
3000 Unpaid obligations, brought forward, Oct 1 .....	3,436	3,501	3,501
3010 New obligations, unexpired accounts .....	3,973	3,959	4,009
3020 Outlays (gross) .....	-3,908	-3,959	-4,009
3050 Unpaid obligations, end of year .....	3,501	3,501	3,501
Uncollected payments:			
3060 Uncollected pymts, Fed sources, brought forward, Oct 1 .....	-324	-341	-341
3070 Change in uncollected pymts, Fed sources, unexpired .....	-17	.....	.....
3090 Uncollected pymts, Fed sources, end of year .....	-341	-341	-341
Memorandum (non-add) entries:			
3100 Obligated balance, start of year .....	3,112	3,160	3,160
3200 Obligated balance, end of year .....	3,160	3,160	3,160

**Budget authority and outlays, net:**

Mandatory:			
4090 Budget authority, gross .....	3,971	4,591	4,415
Outlays, gross:			
4100 Outlays from new mandatory authority .....	3,719	3,859	3,909
4101 Outlays from mandatory balances .....	189	100	100
4110 Outlays, gross (total) .....	3,908	3,959	4,009
Offsets against gross budget authority and outlays:			
Offsetting collections (collected) from:			
4120 Federal sources .....	-73	-90	-90
4121 Interest on Federal securities .....	-8	.....	.....
4123 Non-Federal sources .....	-3,444	-3,896	-3,896
4130 Offsets against gross budget authority and outlays (total) ....	-3,525	-3,986	-3,986
Additional offsets against gross budget authority only:			
4140 Change in uncollected pymts, Fed sources, unexpired .....	-17	.....	.....
4160 Budget authority, net (mandatory) .....	429	605	429
4170 Outlays, net (mandatory) .....	383	-27	23
4180 Budget authority, net (total) .....	429	605	429
4190 Outlays, net (total) .....	383	-27	23

**Memorandum (non-add) entries:**

5000 Total investments, SOY: Federal securities: Par value .....	475	205	205
5001 Total investments, EOY: Federal securities: Par value .....	205	205	205
5052 Obligated balance, SOY: Contract authority .....	2,650	2,945	2,945
5053 Obligated balance, EOY: Contract authority .....	2,945	2,945	2,945
5090 Unexpired unavailable balance, SOY: Offsetting collections .....	9	10	10
5092 Unexpired unavailable balance, EOY: Offsetting collections .....	10	10	.....

**Status of Direct Loans** (in millions of dollars)

Identification code 089-4045-0-3-271	2017 actual	2018 est.	2019 est.
Cumulative balance of direct loans outstanding:			
1210 Outstanding, start of year .....	2	2	2
1290 Outstanding, end of year .....	2	2	2

Bonneville Power Administration (BPA) is a Federal electric power marketing agency in the Pacific Northwest. BPA markets hydroelectric power from 21 multipurpose water resource projects of the U.S. Army Corps of Engineers and 10 projects of the U.S. Bureau of Reclamation, plus some energy from non-Federal generating projects in the region. These generating resources and BPA's transmission system are operated as an integrated power system with operating and financial results combined and reported as the Federal Columbia River Power System (FCRPS). BPA provides about 50 percent of the region's electric energy supply and about three-fourths of the region's high-voltage electric power transmission capacity.

BPA is responsible for meeting the net firm power requirements of its requesting customers through a variety of means, including energy conservation programs, acquisition of renewable and other resources, and power exchanges with utilities both in and outside the region.

BPA finances its operations with a business-type budget under the Government Corporation Control Act, 31 U.S.C. 9101-10, on the basis of the

## BONNEVILLE POWER ADMINISTRATION FUND—Continued

self-financing authority provided by the Federal Columbia River Transmission System Act of 1974 (Transmission Act) (Public Law 93–454) and the U.S. Treasury borrowing authority provided by the Transmission Act, the Pacific Northwest Electric Power Planning and Conservation Act (Pacific Northwest Power Act) (Public Law 96–501) for energy conservation, renewable energy resources, capital fish facilities, and other purposes, the American Recovery and Reinvestment Act of 2009 (Public Law 111–5), and other legislation. Authority to borrow from the U.S. Treasury is available to the BPA on a permanent, indefinite basis. The amount of U.S. Treasury borrowing outstanding at any time cannot exceed \$7.70 billion. BPA finances its approximate \$4.4 billion annual cost of operations and investments primarily using power and transmission revenues and loans from the U.S. Treasury.

**Operating Expenses—Transmission Services.**—Provides for operating over 15,000 circuit miles of high-voltage transmissions lines and 261 substations, and for maintaining the facilities and equipment of the Bonneville transmission system in 2019.

**Power Services.**—Provides for the planning, contractual acquisition and oversight of reliable, cost effective resources. These resources are needed to serve BPA's portion of the region's forecasted net electric load requirements. This activity also includes protection, mitigation and enhancement of fish and wildlife affected by hydroelectric facilities on the Columbia River and its tributaries in accordance with the Pacific Northwest Power Act. This activity provides for payment of the operation and maintenance (O&M) costs allocated to power the 31 U.S. Army Corps of Engineers and U.S. Bureau of Reclamation hydro projects, amortization on the capital investment in power generating facilities, and irrigation assistance at U.S. Bureau of Reclamation facilities. This activity also provides for the planning, contractual acquisition and oversight of reliable, cost effective conservation. It also provides for extending the benefits of low-cost Federal power to the residential and small farm customers of investor-owned and publicly owned utilities, in accordance with the Pacific Northwest Power Act and for activities of the Pacific Northwest Electric Power and Conservation Planning Council required by the Pacific Northwest Power Act.

**Interest.**—Provides for payments to the U.S. Treasury for interest on U.S. Treasury borrowings to finance BPA's capital investments under \$7.70 billion of U.S. Treasury borrowing authority provided by the Transmission Act; the Pacific Northwest Power Act for energy conservation, renewable energy resources, capital fish facilities, and other purposes; the American Recovery and Reinvestment Act of 2009; and other legislation. This interest category also includes interest on U.S. Army Corps of Engineers, BPA and U.S. Bureau of Reclamation appropriated debt.

**Capital Investments—Transmission Services.**—Provides for the planning, design and construction of transmission lines, substation and control system additions, replacements, and enhancements to the FCRPS transmission system for a reliable, efficient and cost-effective regional transmission system. Provides for planning, design, and construction work to repair or replace existing transmission lines, substations, control systems, and general facilities of the FCRPS transmission system.

**Power Services.**—Provides for direct funding of additions, improvements, and replacements at existing Federal hydroelectric projects in the Northwest. It also provides for capital investments to implement environmental activities, and protect, mitigate, and enhance fish and wildlife affected by hydroelectric facilities on the Columbia River and its tributaries, in accordance with the Pacific Northwest Power Act. This activity provides for the planning, contractual acquisition and oversight of reliable, cost effective conservation.

**Capital Equipment/Capitalized Bond Premium.**—Provides for capital information technologies, office furniture and equipment, and software capital development in support of all BPA programs. It also provides for bond premiums incurred for refinancing of bonds.

**Total Capital Obligations.**—The 2019 capital obligations are estimated to be \$826.7 million.

**Contingencies.**—Although contingencies are not specifically funded, the need may arise to provide for purchase of power in low-water years; for repair and/or replacement of facilities affected by natural and man-made emergencies, including the resulting additional costs for contracting, construction, and operation and maintenance work; for unavoidable increased costs for the planned program due to necessary but unforeseen adjustments, including engineering and design changes, contractor and other claims and relocations; or for payment of a retrospective premium adjustment in excess nuclear property insurance.

**Financing.**—The Transmission Act provides for the use by BPA of all receipts, collections, and recoveries in cash from all sources, including the sale of bonds, to finance the annual budget programs of BPA. These receipts result primarily from the sale of power and transmission services. The Transmission Act also provides for authority to borrow from the U.S. Treasury at rates comparable to borrowings at open market rates for similar issues. BPA has \$7.70 billion of U.S. Treasury borrowing authority provided by the Transmission Act; the Pacific Northwest Power Act for energy conservation, renewable energy resources, capital fish facilities, and other purposes; the American Recovery and Reinvestment Act of 2009; and other legislation. At the end of 2017, BPA had outstanding bonds with the U.S. Treasury of \$5,008.7 million. At the end of 2017, BPA also had \$8,263.1 million of non-Federal debt outstanding, including Energy Northwest bonds. BPA will rely primarily on its U.S. Treasury borrowing authority to finance capital projects, but may also elect to use cash reserves generated by revenues from customers or seek third party financing sources when feasible to finance some of these investments.

In 2017, BPA made payments to the Treasury of \$1,258 million and also expects to make payments of \$514 million in 2018 and \$781 million in 2019. The 2019 payment is expected to be distributed as follows: interest on bonds and appropriations ( \$284 million), amortization ( \$409 million), and other ( \$88 million). BPA also received credits totaling approximately \$79 million applied against its Treasury payments in 2017 to reflect amounts diverted to fish mitigation efforts, but not allocable to power, in the Columbia and Snake River systems.

BPA, with input from its stakeholders, considers other strategies to sustain funding for its infrastructure investment requirements as well. BPA's Financial Plan defines strategies and policies for guiding how BPA will manage risk and variability of electricity markets and water years. It also describes how BPA will continue to manage to ensure it meets its Treasury repayment responsibilities.

**Direct Loans.**—During 2019, no new direct loan obligations may be made.

**Operating Results.**—Total revenues are forecast at approximately \$4.4 billion in 2019.

It should be noted that BPA's revenue forecasts are based on several critical assumptions about both the supply of and demand for Federal energy. During the operating year, deviation from the conditions assumed in a rate case may result in a variation in actual revenues of several hundred million dollars from the forecast.

Consistent with Administration policy, BPA will continue to fully recover, from the sale of electric power and transmission, funds sufficient to cover the full cost of Civil Service Retirement System and Post-Retirement Health Benefits for its employees. The entire cost of BPA and the power share of FCRPS U.S. Army Corps of Engineers and U.S. Bureau of Reclamation employees working under the Federal Employees Retirement System is fully recovered in wholesale electric power and transmission rates.

## Balance Sheet (in millions of dollars)

Identification code 089–4045–0–3–271		2016 actual	2017 actual
ASSETS:			
Federal assets:			
1101	Fund balances with Treasury .....	55	87
	Investments in US securities:		
1106	Receivables, net .....	479	205
1206	Non-Federal assets: Receivables, net .....	323	341

Other Federal assets:			
1802	Inventories and related properties .....	112	112
1803	Property, plant and equipment, net .....	7,109	7,152
1901	Other assets .....	14,982	14,744
1999	Total assets .....	23,060	22,641
<b>LIABILITIES:</b>			
Federal liabilities:			
2102	Interest payable .....	77	118
2103	Debt .....	8,473	7,811
Non-Federal liabilities:			
2201	Accounts payable .....	315	377
2203	Debt .....	5,949	6,093
2207	Other .....	8,246	8,242
2999	Total liabilities .....	23,060	22,641
4999	Total liabilities and net position .....	23,060	22,641

**Object Classification** (in millions of dollars)

Identification code 089-4045-0-3-271		2017 actual	2018 est.	2019 est.
Reimbursable obligations:				
11.1	Personnel compensation: Full-time permanent .....	376	357	361
12.1	Civilian personnel benefits .....	138	131	133
21.0	Travel and transportation of persons .....	11	10	11
23.1	Rental payments to GSA .....		1	1
23.3	Communications, utilities, and miscellaneous charges .....	9	9	10
25.1	Advisory and assistance services .....	16	15	15
25.2	Other services from non-Federal sources .....	2,313	2,350	2,379
25.5	Research and development contracts .....	13	11	11
26.0	Supplies and materials .....	52	49	50
31.0	Equipment .....	427	444	450
32.0	Land and structures .....	249	198	201
41.0	Grants, subsidies, and contributions .....	38	41	40
42.0	Insurance claims and indemnities .....	36	36	36
43.0	Interest and dividends .....	295	307	311
99.9	Total new obligations, unexpired accounts .....	3,973	3,959	4,009

**Employment Summary**

Identification code 089-4045-0-3-271		2017 actual	2018 est.	2019 est.
1001	Direct civilian full-time equivalent employment .....	2,891	3,000	3,000

**BONNEVILLE POWER ADMINISTRATION FUND**

(Legislative proposal, subject to PAYGO)

This proposal would authorize the Federal government to sell the transmission assets of the Bonneville Power Administration, which operates and maintains over 15,000 circuit-miles of high voltage transmission lines and 261 substations.

**DEPARTMENTAL ADMINISTRATION****Federal Funds****DEPARTMENTAL ADMINISTRATION**

For salaries and expenses of the Department of Energy necessary for departmental administration in carrying out the purposes of the Department of Energy Organization Act (42 U.S.C. 7101 et seq.), \$235,534,000, to remain available until September 30, 2020, including the hire of passenger motor vehicles and official reception and representation expenses not to exceed \$30,000, plus such additional amounts as necessary to cover increases in the estimated amount of cost of work for others notwithstanding the provisions of the Anti-Deficiency Act (31 U.S.C. 1511 et seq.): Provided, That such increases in cost of work are offset by revenue increases of the same or greater amount: Provided further, That moneys received by the Department for miscellaneous revenues estimated to total \$96,000,000 in fiscal year 2019 may be retained and used for operating expenses within this account, as authorized by section 201 of Public Law 95-238, notwithstanding the provisions of 31 U.S.C. 3302: Provided further, That the sum herein appropriated shall be reduced as collections are received during the fiscal year so as to result in a final fiscal year 2019 appropriation from the general fund estimated at not more than \$139,534,000.

Note.—A full-year 2018 appropriation for this account was not enacted at the time the budget was prepared; therefore, the budget assumes this account is operating under the Continuing Appropriations Act, 2018 (Division D of P.L. 115-56, as amended). The amounts included for 2018 reflect the annualized level provided by the continuing resolution.

**Program and Financing** (in millions of dollars)

Identification code 089-0228-0-1-276		2017 actual	2018 est.	2019 est.
<b>Obligations by program activity:</b>				
0003	Office of the Secretary .....	4	5	5
0004	Office of Congressional and Intergovernmental Affairs .....	5	6	6
0005	Office of Public Affairs .....	3	3	3
0006	General Counsel .....	31	33	33
0007	Office of Policy .....			3
0008	Economic Impact and Diversity .....	11	10	10
0009	Chief Financial Officer .....	3		
0011	Human Capital Management .....	25	26	26
0012	Indian Energy Policy .....	18	10	10
0013	Energy Policy and Systems Analysis .....	24	10	
0014	International Affairs .....	26	26	25
0015	Office of Small and Disadvantaged Business Utilization .....	3	3	3
0018	Management .....	55	55	53
0020	Project Management Oversight and Assessment .....	13	15	15
0025	Office of Technology Transitions .....	4	6	6
0045	Strategic partnership projects .....	30	40	40
0799	Total direct obligations .....	255	248	238
0801	Departmental Administration (Reimbursable) .....	9	9	9
0900	Total new obligations, unexpired accounts .....	264	257	247

**Budgetary resources:**

Unobligated balance:				
1000	Unobligated balance brought forward, Oct 1 .....	67	61	48
1001	Discretionary unobligated balance brought fwd, Oct 1 .....	67	.....	.....
1011	Unobligated balance transfer from other acct [072-0306] ....	2	.....	.....
1011	Unobligated balance transfer from other acct [072-1037] ....	8	.....	.....
1021	Recoveries of prior year unpaid obligations .....	1	.....	.....
		<hr/>	<hr/>	<hr/>
1050	Unobligated balance (total) .....	78	61	48
Budget authority:				
Appropriations, discretionary:				
1100	Appropriation .....	147	148	140
Spending authority from offsetting collections, discretionary:				
1700	Collected .....	102	96	96
1701	Change in uncollected payments, Federal sources .....	12	.....	.....
		<hr/>	<hr/>	<hr/>
1750	Spending auth from offsetting collections, disc (total) .....	114	96	96
1900	Budget authority (total) .....	261	244	236
1930	Total budgetary resources available .....	339	305	284
Memorandum (non-add) entries:				
1940	Unobligated balance expiring .....	-14	.....	.....
1941	Unexpired unobligated balance, end of year .....	61	48	37

**Change in obligated balance:**

Unpaid obligations:				
3000	Unpaid obligations, brought forward, Oct 1 .....	119	123	66
3010	New obligations, unexpired accounts .....	264	257	247
3020	Outlays (gross) .....	-255	-314	-248
3040	Recoveries of prior year unpaid obligations, unexpired .....	-1	.....	.....
3041	Recoveries of prior year unpaid obligations, expired .....	-4	.....	.....
		<u>          </u>	<u>          </u>	<u>          </u>
3050	Unpaid obligations, end of year .....	123	66	65
Uncollected payments:				
3060	Uncollected pymts, Fed sources, brought forward, Oct 1 .....		-12	-12
3070	Change in uncollected pymts, Fed sources, unexpired .....	-12	.....	.....
		<u>          </u>	<u>          </u>	<u>          </u>
3090	Uncollected pymts, Fed sources, end of year .....	-12	-12	-12
Memorandum (non-add) entries:				
3100	Obligated balance, start of year .....	119	111	54
3200	Obligated balance, end of year .....	111	54	53

**Budget authority and outlays, net:**

Discretionary:				
4000	Budget authority, gross .....	261	244	236
Outlays, gross:				
4010	Outlays from new discretionary authority .....	147	201	195
4011	Outlays from discretionary balances .....	108	113	53
4020	Outlays, gross (total) .....	255	314	248
Offsets against gross budget authority and outlays:				
Offsetting collections (collected) from:				
4030	Federal sources .....	-24	-36	-36
4033	Non-Federal sources .....	-78	-60	-60
4040	Offsets against gross budget authority and outlays (total) ....	-102	-96	-96
Additional offsets against gross budget authority only:				
4050	Change in uncollected pymts, Fed sources, unexpired .....	-12	.....	.....
4070	Budget authority, net (discretionary) .....	147	148	140
4080	Outlays, net (discretionary) .....	153	218	152
4180	Budget authority, net (total) .....	147	148	140
4190	Outlays, net (total) .....	153	218	152

## DEPARTMENTAL ADMINISTRATION—Continued

*Office of the Secretary (OSE).*—Directs and leads the management of the Department and provides policy guidance to line and staff organizations in the accomplishment of DOE's mission.

*Congressional and Intergovernmental Affairs (CI).*—Responsible for DOE's liaison, communication, coordinating, directing, and promoting the Department's policies and legislative initiatives with Congress, State, territorial, Tribal and local government officials, and other Federal agencies.

*Public Affairs (PA).*—Responsible for directing and managing the Department's policies and initiatives with the public, news media, and other stakeholders. PA serves as the Department's chief spokesperson with the news media, shapes initiatives aimed at educating the press and public about DOE issues, builds and maintains the Energy.gov internet platform.

*General Counsel (GC).*—Responsible for providing legal services to all Department offices, and for determining the Department's authoritative position on any question of law with respect to all Department offices and programs, except for those belonging exclusively to the Federal Energy Regulatory Commission. GC is responsible for the coordination and clearance of proposed legislation affecting energy policy and Department activities. GC administers and monitors standards of conduct requirements, conducts patent program and intellectual property activities, and coordinates rulemaking actions of the Department with other Federal agencies.

*Economic Impact and Diversity (ED).*—Develops and executes DOE policies to implement applicable statutes and Executive Orders that impact diversity goals affecting equal employment opportunities, minority businesses, minority educational institutions, and historically underrepresented communities. ED identifies ways of ensuring that underrepresented populations are afforded an opportunity to participate fully in DOE programs.

*Chief Financial Officer (CFO).*—Assures the effective management and financial integrity of DOE programs, activities, and resources by developing, implementing, and monitoring DOE-wide policies and systems in the areas of budget administration, finance and accounting, internal controls and financial policy, corporate financial systems, and strategic planning.

*Chief Information Officer (CIO).*—Provides advice and assistance to the Secretary and other senior managers to ensure that information technology is acquired and information resources are managed in a manner that complies with Administration policies and procedures and statutory requirements.

*Chief Human Capital Officer (HC).*—Provides DOE leadership on the impact and use of policies, proposals, programs, partnership agreements and relationships related to all aspects of human capital management. HC seeks solutions that address workforce issues in the areas of recruiting, hiring, motivating, succession planning, competency development, training and learning, retention, and diversity.

*Office of Policy (OP).*—Serves as the principal policy office advising the Secretary of Energy.

*International Affairs (IA).*—Advises Departmental leadership on strategic implementation of U.S. international energy policy, in line with energy security and market objectives. IA develops and leads the Department's bilateral and multilateral R&D cooperation, including investment and trade activities with other nations and international agencies, and represents the Department and the United States Government in interagency processes, intergovernmental forums, and bilateral and multilateral proceedings that address energy policies, strategies and objectives.

*Office of Small and Disadvantaged Business Utilization (OSDBU).*—Responsible for maximizing contracting and subcontracting opportunities for small businesses interested in doing business with the Department. A primary responsibility of OSDBU is to work in partnership with Departmental program elements to achieve prime and subcontracting small business goals set forth by statute and the U.S. Small Business Administration.

*Office of Management (MA).*—Provides DOE with centralized direction and oversight for the full range of management, procurement and administrative services. MA is responsible for project and contract management policy development and oversight, acquisition and contract administration,

and delivery of procurement services to DOE headquarters organizations. MA activities include the management of headquarters facilities, Department-wide implementation of Federal sustainability goals, and other related functions of the Department.

*Project Management Oversight and Assessment (PM).*—Provides DOE corporate oversight, managerial leadership and assistance in developing and implementing DOE-wide policies, procedures, programs, and management systems pertaining to project management, and manages the project management career development program for DOE's Federal Project Directors. PM also provides independent oversight of Environmental Management's portfolio of capital asset projects that are \$100 million or greater, including all activities involved with on-site cost, schedule, technical and management status reviews, as well as analyzing and reporting performance progress of the projects. PM will also provide cost estimating and program evaluation.

*Strategic Partnership Programs (SPP).*—Covers the cost of work performed under orders placed with the Department by non-DOE entities that are precluded by law from making advance payments and certain revenue programs. Reimbursement of these costs is made through deposits of offsetting collections to this account.

*Office of Indian Energy Policy and Programs (IE).*—Directs, fosters, coordinates, and implements energy planning, education, management, and competitive grant programs that assist Tribes with clean energy development and infrastructure, capacity building, energy costs, and electrification of Indian lands and homes. IE coordinates programmatic activity across the Department related to development of clean energy resources on Indian lands, and works with other federal government agencies, Indian Tribes, and Tribal organizations to promote Indian energy policies and initiatives.

*Office of Technology Transitions (OTT).*—Facilitates wide-reaching availability of DOE's capabilities and technologies for private sector commercialization. OTT serves a multi-disciplinary role, providing strategic management of DOE's tech-to-market activities, including the statutory Technology Commercialization Fund. OTT coordinates technology transition activities, data and analyses within the DOE—across Programs, field offices and the National Labs—as well as with other Federal agencies to reduce redundancies and improve the likelihood and speed of outcomes toward technology transfer and development of DOE research outputs.

## Object Classification (in millions of dollars)

Identification code 089-0228-0-1-276	2017 actual	2018 est.	2019 est.
Direct obligations:			
Personnel compensation:			
11.1 Full-time permanent .....	81	81	80
11.3 Other than full-time permanent .....	8	8	8
11.5 Other personnel compensation .....	1	1	1
11.9 Total personnel compensation .....	90	90	89
12.1 Civilian personnel benefits .....	27	27	27
21.0 Travel and transportation of persons .....	3	3	3
23.3 Communications, utilities, and miscellaneous charges .....	1	1	1
24.0 Pamphlets, Documents, Subscriptions and Publications .....	2	2	2
25.1 Advisory and assistance services .....	22	22	22
25.2 Other services from non-Federal sources .....	14	14	14
25.3 Other goods and services from Federal sources .....	36	36	38
25.4 Operation and maintenance of facilities .....	43	36	27
26.0 Other Services .....	2	2	2
41.0 Grants, subsidies, and contributions .....	12	12	10
44.0 Refunds .....	3	3	3
99.0 Direct obligations .....	255	248	238
99.0 Reimbursable obligations .....	9	9	9
99.9 Total new obligations, unexpired accounts .....	264	257	247

## Employment Summary

Identification code 089-0228-0-1-276	2017 actual	2018 est.	2019 est.
1001 Direct civilian full-time equivalent employment .....	689	692	831



2001 Reimbursable civilian full-time equivalent employment ..... 1 .....

### OFFICE OF THE INSPECTOR GENERAL

*For expenses necessary for the Office of the Inspector General in carrying out the provisions of the Inspector General Act of 1978, \$51,330,000, to remain available until September 30, 2020.*

Note.—A full-year 2018 appropriation for this account was not enacted at the time the budget was prepared; therefore, the budget assumes this account is operating under the Continuing Appropriations Act, 2018 (Division D of P.L. 115–56, as amended). The amounts included for 2018 reflect the annualized level provided by the continuing resolution.

### Program and Financing (in millions of dollars)

Identification code 089–0236–0–1–276	2017 actual	2018 est.	2019 est.
<b>Obligations by program activity:</b>			
0001 Office of the Inspector General (Direct) .....	48	46	51
<b>Budgetary resources:</b>			
Unobligated balance:			
1000 Unobligated balance brought forward, Oct 1 .....	6	2	
Budget authority:			
Appropriations, discretionary:			
1100 Appropriation .....	44	44	51
1930 Total budgetary resources available .....	50	46	51
Memorandum (non-add) entries:			
1941 Unexpired unobligated balance, end of year .....	2		
<b>Change in obligated balance:</b>			
Unpaid obligations:			
3000 Unpaid obligations, brought forward, Oct 1 .....	3	3	7
3010 New obligations, unexpired accounts .....	48	46	51
3020 Outlays (gross) .....	–48	–42	–50
3050 Unpaid obligations, end of year .....	3	7	8
Memorandum (non-add) entries:			
3100 Obligated balance, start of year .....	3	3	7
3200 Obligated balance, end of year .....	3	7	8
<b>Budget authority and outlays, net:</b>			
Discretionary:			
4000 Budget authority, gross .....	44	44	51
Outlays, gross:			
4010 Outlays from new discretionary authority .....	39	37	43
4011 Outlays from discretionary balances .....	9	5	7
4020 Outlays, gross (total) .....	48	42	50
4180 Budget authority, net (total) .....	44	44	51
4190 Outlays, net (total) .....	48	42	50

The Office of Inspector General (OIG) provides Department-wide (including the National Nuclear Security Administration and the Federal Energy Regulatory Commission) audit, inspection, and investigative functions to identify and recommend corrections for management and administrative deficiencies, which create conditions for existing or potential instances of fraud, waste, abuse or violations of law. The audit function provides financial and performance audits of programs and operations. The inspection function provides independent inspection and analysis of the performance of programs and operations. The investigative function provides for the detection and investigation of improper and illegal activities involving programs, personnel, and operations. Through these efforts, the OIG identifies opportunities for cost savings and operational efficiency; identifies programs that are not meeting performance expectations; recovers monies to the Department and the Treasury as a result of civil and criminal prosecutions; and identifies ways to make Departmental programs safer and more secure.

### Object Classification (in millions of dollars)

Identification code 089–0236–0–1–276	2017 actual	2018 est.	2019 est.
<b>Direct obligations:</b>			
Personnel compensation:			
11.1 Full-time permanent .....	29	29	32
11.5 Other personnel compensation .....	2	2	2

11.9 Total personnel compensation .....	31	31	34
12.1 Civilian personnel benefits .....	12	11	12
21.0 Travel and transportation of persons .....	1	1	1
25.1 Advisory and assistance services .....	1	1	1
25.3 Other goods and services from Federal sources .....	2	1	2
31.0 Equipment .....	1	1	1
99.9 Total new obligations, unexpired accounts .....	48	46	51

### Employment Summary

Identification code 089–0236–0–1–276	2017 actual	2018 est.	2019 est.
1001 Direct civilian full-time equivalent employment .....	270	270	279

### WORKING CAPITAL FUND

### Program and Financing (in millions of dollars)

Identification code 089–4563–0–4–276	2017 actual	2018 est.	2019 est.
<b>Obligations by program activity:</b>			
0801 Indirect WCF .....	6		
0802 Project management and career development program .....	2	2	2
0810 Supplies .....	2	2	2
0812 Copying Services .....	4	4	4
0813 Printing and graphics .....	4	5	5
0814 Building Occupancy (Rent, Operations & Maintenance) .....	81	112	112
0815 Corporate Business Systems .....	44	47	47
0816 Mail and Transportation Services .....	4	4	4
0817 Financial Statement Audits .....	8	12	12
0818 Procurement Management .....	9	16	16
0820 Telecommunication .....	32	37	37
0821 Overseas Presence .....	6	16	16
0822 Interagency Transfers .....	8	9	9
0823 Health Services .....	1	2	2
0824 CyberOne .....	33	35	35
0825 Corporate Training Services .....	2	3	3
0826 A-123 / Internal Controls .....	1	3	3
0827 Pension Studies .....	1	1	1
0900 Total new obligations, unexpired accounts .....	248	310	310
<b>Budgetary resources:</b>			
Unobligated balance:			
1000 Unobligated balance brought forward, Oct 1 .....	18	48	48
1021 Recoveries of prior year unpaid obligations .....	5		
1050 Unobligated balance (total) .....	23	48	48
Budget authority:			
Spending authority from offsetting collections, discretionary:			
Collected .....	273	310	310
1930 Total budgetary resources available .....	296	358	358
Memorandum (non-add) entries:			
1941 Unexpired unobligated balance, end of year .....	48	48	48
<b>Change in obligated balance:</b>			
Unpaid obligations:			
3000 Unpaid obligations, brought forward, Oct 1 .....	167	133	79
3010 New obligations, unexpired accounts .....	248	310	310
3020 Outlays (gross) .....	–277	–364	–370
3040 Recoveries of prior year unpaid obligations, unexpired .....	–5		
3050 Unpaid obligations, end of year .....	133	79	19
Memorandum (non-add) entries:			
3100 Obligated balance, start of year .....	167	133	79
3200 Obligated balance, end of year .....	133	79	19
<b>Budget authority and outlays, net:</b>			
Discretionary:			
4000 Budget authority, gross .....	273	310	310
Outlays, gross:			
4010 Outlays from new discretionary authority .....	125	298	298
4011 Outlays from discretionary balances .....	152	66	72
4020 Outlays, gross (total) .....	277	364	370
Offsets against gross budget authority and outlays:			
Offsetting collections (collected) from:			
4030 Federal sources .....	–273	–310	–310
4180 Budget authority, net (total) .....			
4190 Outlays, net (total) .....	4	54	60

## WORKING CAPITAL FUND—Continued

The Department's Working Capital Fund (WCF) provides the following shared services: rent and building operations, telecommunications, cybersecurity, automated office systems including the Standard Accounting and Reporting System, Strategic Integrated Procurement Enterprise System, payment processing, payroll and personnel processing, administrative services, training and health services, overseas representation, interagency transfers, procurement management, audits, and controls for financial reporting. The WCF assists the Department in improving operational efficiency.

## Object Classification (in millions of dollars)

Identification code 089-4563-0-4-276	2017 actual	2018 est.	2019 est.
Reimbursable obligations:			
Personnel compensation:			
11.1 Full-time permanent .....	11	14	14
11.8 Special personal services payments .....	2	3	3
11.9 Total personnel compensation .....	13	17	17
12.1 Civilian personnel benefits .....	4	5	5
21.0 Travel and transportation of persons .....	1	1	1
22.0 Transportation of things .....	1	1	1
23.1 Rental payments to GSA .....	35	43	43
23.3 Communications, utilities, and miscellaneous charges .....	15	19	19
24.0 Printing and reproduction .....	2	3	3
25.1 Advisory and assistance services .....	40	50	50
25.2 Other services from non-Federal sources .....	20	25	25
25.3 Other goods and services from Federal sources .....	79	98	99
25.4 Operation and maintenance of facilities .....	25	31	31
26.0 Supplies and materials .....	1	1	1
31.0 Equipment .....	6	8	8
32.0 Land and structures .....	6	8	8
99.9 Total new obligations, unexpired accounts .....	248	310	310

## Employment Summary

Identification code 089-4563-0-4-276	2017 actual	2018 est.	2019 est.
2001 Reimbursable civilian full-time equivalent employment .....	96	100	100

## GENERAL FUND RECEIPT ACCOUNTS

(in millions of dollars)

	2017 actual	2018 est.	2019 est.
Offsetting receipts from the public:			
089-089400 Fees and Recoveries, Federal Energy Regulatory Commission .....	17	9	16
089-223400 Sale of Strategic Petroleum Reserve Oil .....	449	729	637
089-224500 Sale and Transmission of Electric Energy, Falcon Dam: Legislative proposal, subject to PAYGO .....			1
089-224700 Sale and Transmission of Electric Energy, Southwestern Power Administration .....	16	38	21
089-224700 Sale and Transmission of Electric Energy, Southwestern Power Administration: Legislative proposal, subject to PAYGO .....			2
089-224800 Sale and Transmission of Electric Energy, Southeastern Power Administration .....	160	175	175
089-224800 Sale and Transmission of Electric Energy, Southeastern Power Administration: Legislative proposal, subject to PAYGO .....			-13
089-224900 Sale of Power and Other Utilities, not Otherwise Classified .....	20	30	30
089-224900 Sale of Power and Other Utilities, not Otherwise Classified: Legislative proposal, subject to PAYGO .....			172
089-267910 Title 17 Innovative Technology Loan Guarantees, Negative Subsidies .....	11	66	44
089-279530 DOE ATM Direct Loans Downward Reestimate Account .....	15	74	
089-279730 DOE Loan Guarantees Downward Reestimate Account ....	110	258	
089-288900 Repayments on Miscellaneous Recoverable Costs, not Otherwise Classified .....	27	30	31
089-322000 All Other General Fund Proprietary Receipts Including Budget Clearing Accounts .....	74	14	14
General Fund Offsetting receipts from the public .....	899	1,423	1,130

Intragovernmental payments:

089-388500 Undistributed Intragovernmental Payments and Receivables from Cancelled Accounts .....	3	7
General Fund Intragovernmental payments .....	3	7

## GENERAL PROVISIONS—DEPARTMENT OF ENERGY

(INCLUDING TRANSFER OF FUNDS)

SEC. 301. (a) No appropriation, funds, or authority made available by this title for the Department of Energy shall be used to initiate or resume any program, project, or activity or to prepare or initiate Requests For Proposals or similar arrangements (including Requests for Quotations, Requests for Information, and Funding Opportunity Announcements) for a program, project, or activity if the program, project, or activity has not been funded by Congress.

(b)(1) Unless the Secretary of Energy notifies the Committees on Appropriations of both Houses of Congress at least 3 full business days in advance, none of the funds made available in this title may be used to—

(A) make a grant allocation or discretionary grant award totaling \$1,000,000 or more;

(B) make a discretionary contract award or Other Transaction Agreement totaling \$1,000,000 or more, including a contract covered by the Federal Acquisition Regulation;

(C) issue a letter of intent to make an allocation, award, or Agreement in excess of the limits in subparagraph (A) or (B); or

(D) announce publicly the intention to make an allocation, award, or Agreement in excess of the limits in subparagraph (A) or (B).

(2) The Secretary of Energy shall submit to the Committees on Appropriations of both Houses of Congress within 15 days of the conclusion of each quarter a report detailing each grant allocation or discretionary grant award totaling less than \$1,000,000 provided during the previous quarter.

(3) The notification required by paragraph (1) and the report required by paragraph (2) shall include the recipient of the award, the amount of the award, the fiscal year for which the funds for the award were appropriated, the account and program, project, or activity from which the funds are being drawn, the title of the award, and a brief description of the activity for which the award is made.

(c) The Department of Energy may not, with respect to any program, project, or activity that uses budget authority made available in this title under the heading "Department of Energy—Energy Programs", enter into a multiyear contract, award a multiyear grant, or enter into a multiyear cooperative agreement unless—

(1) the contract, grant, or cooperative agreement is funded for the full period of performance as anticipated at the time of award; or

(2) the contract, grant, or cooperative agreement includes a clause conditioning the Federal Government's obligation on the availability of future year budget authority and the Secretary notifies the Committees on Appropriations of both Houses of Congress at least 3 days in advance.

(d) Except as provided in subsections (e), (f), and (g), the amounts made available by this title shall be expended as authorized by law for the programs, projects, and activities specified in the "Final Bill" column in the "Department of Energy" table included under the heading "Title III—Department of Energy" in the explanatory statement accompanying this Act.

(e) The amounts made available by this title may be reprogrammed for any program, project, or activity, and the Department shall notify the Committees on Appropriations of both Houses of Congress at least 30 days prior to the use of any proposed reprogramming that would cause any program, project, or activity funding level to increase or decrease by more than \$5,000,000 or 10 percent, whichever is less, during the time period covered by this Act.

(f) None of the funds provided in this title shall be available for obligation or expenditure through a reprogramming of funds that—

(1) creates, initiates, or eliminates a program, project, or activity;

(2) increases funds or personnel for any program, project, or activity for which funds are denied or restricted by this Act; or

(3) reduces funds that are directed to be used for a specific program, project, or activity by this Act.

(g)(1) The Secretary of Energy may waive any requirement or restriction in this section that applies to the use of funds made available for the Department of Energy if compliance with such requirement or restriction would pose a substantial risk to human health, the environment, welfare, or national security.

(2) The Secretary of Energy shall notify the Committees on Appropriations of both Houses of Congress of any waiver under paragraph (1) as soon as practicable, but not later than 3 days after the date of the activity to which a requirement or restriction

tion would otherwise have applied. Such notice shall include an explanation of the substantial risk under paragraph (1) that permitted such waiver.

SEC. 302. The unexpended balances of prior appropriations provided for activities in this Act may be available to the same appropriation accounts for such activities established pursuant to this title. Available balances may be merged with funds in the applicable established accounts and thereafter may be accounted for as one fund for the same time period as originally enacted.

SEC. 303. Funds appropriated by this or any other Act, or made available by the transfer of funds in this Act, for intelligence activities are deemed to be specifically authorized by the Congress for purposes of section 504 of the National Security Act of 1947 (50 U.S.C. 3094) during fiscal year 2019 until the enactment of the Intelligence Authorization Act for fiscal year 2019.

SEC. 304. None of the funds made available in this title shall be used for the construction of facilities classified as high-hazard nuclear facilities under 10 CFR Part 830 unless independent oversight is conducted by the Office of Enterprise Assessments to ensure the project is in compliance with nuclear safety requirements.

SEC. 305. None of the funds made available in this title may be used to approve critical decision-2 or critical decision-3 under Department of Energy Order 413.3B, or any successive departmental guidance, for construction projects where the total project cost exceeds \$100,000,000, until a separate independent cost estimate has been developed for the project for that critical decision.

SEC. 306. Notwithstanding section 301(c) of this Act, none of the funds made available under the heading "Department of Energy—Energy Programs—Science" in this or any subsequent Energy and Water Development and Related Agencies appropriations Act for any fiscal year may be used for a multiyear contract, grant, cooperative agreement, or Other Transaction Agreement of \$1,000,000 or less unless the contract, grant, cooperative agreement, or Other Transaction Agreement is funded for the full period of performance as anticipated at the time of award.

SEC. 307. (a) **NEW REGIONAL RESERVES.**—The Secretary of Energy may not establish any new regional petroleum product reserve unless funding for the proposed regional petroleum product reserve is explicitly requested in advance in an annual budget submission and approved by the Congress in an appropriations Act.

(b) The budget request or notification shall include—

- (1) the justification for the new reserve;
- (2) a cost estimate for the establishment, operation, and maintenance of the reserve, including funding sources;
- (3) a detailed plan for operation of the reserve, including the conditions upon which the products may be released;
- (4) the location of the reserve; and
- (5) the estimate of the total inventory of the reserve.

SEC. 308. Treatment of Lobbying and Political Activity Costs as Allowable Costs under Department of Energy Contracts.

(a) **Allowable Costs.**—

(1) Section 4801(b) of the Atomic Energy Defense Act (50 U.S.C. 2781(b)) is amended—

(A) by striking "(1)" and all that follows through "the Secretary" and inserting "The Secretary"; and

(B) by striking paragraph (2).

(2) Section 305 of the Energy and Water Development Appropriation Act, 1988, as contained in section 101(d) of Public Law 100–202 (101 Stat. 1329–125), is repealed.

(b) **Regulations Revised.**—The Secretary of Energy shall revise existing regulations consistent with the repeal of 50 U.S.C. 2781(b)(2) and section 305 of Public Law 100–202 and shall issue regulations to implement 50 U.S.C. 2781(b), as amended by subsection (a), no later than 150 days after the date of the enactment of this Act. Such regulations shall be consistent with the Federal Acquisition Regulation 48 C.F.R. 31.205–22.

SEC. 309. Not to exceed 5 percent of any appropriation made available for Department of Energy activities funded in this Act may be transferred between such appropriations, but no such appropriation, except as otherwise provided, shall be increased or decreased by more than 5 percent by any such transfers, and notification of any such transfers shall be submitted promptly to the Committees on Appropriations of the House of Representatives and the Senate.

SEC. 310. Notwithstanding section 161 of the Energy Policy and Conservation Act (42 U.S.C. 6241), the Secretary of Energy shall draw down and sell one million barrels of refined petroleum product from the Strategic Petroleum Reserve during fiscal year 2019. Proceeds from sales under this section shall be deposited into the general fund of the Treasury during fiscal year 2019.

SEC. 311. The Secretary of Energy may draw down and sell up to 1 million barrels of crude oil from the Strategic Petroleum Reserves during fiscal year 2019. The proceeds of such sale shall be deposited into the SPR Petroleum Account and shall remain available until expended.

## TITLE V—GENERAL PROVISIONS

SEC. 501. None of the funds appropriated by this Act may be used in any way, directly or indirectly, to influence congressional action on any legislation or appropriation matters pending before Congress, other than to communicate to Members of Congress as described in 18 U.S.C. 1913.

SEC. 502. None of the funds made available by this Act may be used in contravention of Executive Order No. 12898 of February 11, 1994 (Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations).

