

Report to Congress

Low Income Home Energy Assistance Program (LIHEAP)

Reducing the Volatility in Annual State LIHEAP

Allocations as a Result of the Statutory Formula

APPENDICES



U.S. DEPARTMENT OF
HEALTH AND HUMAN SERVICES
Administration for Children and Families
Office of Community Services
Division of Energy Assistance

ADMINISTRATION FOR
CHILDREN & FAMILIES

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APPENDIX 1- FY 2016-FY 2019 STATE ALLOCATIONS FROM THREE-YEAR MOVING LIHEE AVERAGES UNDER APPROACH 2 AND APPROACH 3

This appendix shows the state allocations for each year before FY 2020 from Approaches 2 and 3. Both approaches use LIHEE averaging periods that end two years before the year of interest. However, Approach 2 uses actual fiscal year conditions, whereas Approach 3 uses FY 2016 conditions.

Approach 2: Revisions to LIHEE Plus Other Fiscal Year Conditions and Update Timespans Ending Two Years Before the Year of Interest—FY 2016 through FY 2019

Approach 2 uses, for each LIHEE update (whether annual or triennial), the three-year average of estimated LIHEE for the period ending two years before the year of interest. The FY 2017 through FY 2019 allocations that result from each method under this approach appear in Table A1 through Table A4 of this Appendix. The equivalent FY 2020 allocations appear in Table 20 of the report's body.

Table A1 Actual FY 2016 State Gross Allocations and Hypothetical Allocations with 1984-Formula Factors Averaged for FY 2012 - FY 2014 (Annually and Triennially)¹

| Grantee | Actual Gross Allocation for FY 2016 | FY 2016 Gross Alloc. with Annually Updated Avg. 1984-Formula Factors (FY 2012 - FY 2014) | FY 2016 Gross Alloc. with Triennially Updated Avg. 1984-Formula Factors (FY 2012 - FY 2014) ² | FY 2016 Annually Updated Avg. over Actual--Perc. Difference in Allocation | FY 2016 Triennially Updated Avg. over Actual--Perc. Difference in Allocation |
|----------------------|-------------------------------------|--|--|---|--|
| Alabama | \$43,551,071 | \$48,650,387 | \$48,650,387 | 11.71% | 11.71% |
| Alaska | \$17,496,313 | \$17,496,313 | \$17,496,313 | 0.00% | 0.00% |
| Arizona | \$21,061,817 | \$23,527,906 | \$23,527,906 | 11.71% | 11.71% |
| Arkansas | \$27,857,843 | \$27,740,109 | \$27,740,109 | -0.42% | -0.42% |
| California | \$177,168,033 | \$150,852,235 | \$150,852,235 | -14.85% | -14.85% |
| Colorado | \$49,002,284 | \$46,048,947 | \$46,048,947 | -6.03% | -6.03% |
| Connecticut | \$80,689,886 | \$78,129,551 | \$78,129,551 | -3.17% | -3.17% |
| Delaware | \$12,573,831 | \$12,568,136 | \$12,568,136 | -0.05% | -0.05% |
| District of Columbia | \$10,387,179 | \$10,387,179 | \$10,387,179 | 0.00% | 0.00% |
| Florida | \$68,910,798 | \$76,979,438 | \$76,979,438 | 11.71% | 11.71% |
| Georgia | \$54,484,552 | \$60,864,050 | \$60,864,050 | 11.71% | 11.71% |
| Hawaii | \$5,486,895 | \$6,078,706 | \$6,078,706 | 10.79% | 10.79% |
| Idaho | \$19,998,828 | \$19,998,828 | \$19,998,828 | 0.00% | 0.00% |
| Illinois | \$166,270,241 | \$169,607,743 | \$169,607,743 | 2.01% | 2.01% |
| Indiana | \$75,282,494 | \$75,282,494 | \$75,282,494 | 0.00% | 0.00% |
| Iowa | \$53,353,713 | \$53,353,713 | \$53,353,713 | 0.00% | 0.00% |
| Kansas | \$31,920,554 | \$31,709,399 | \$31,709,399 | -0.66% | -0.66% |
| Kentucky | \$46,712,638 | \$46,424,054 | \$46,424,054 | -0.62% | -0.62% |

¹ The six states with yellow-filled cells have percentage differences from FY 2016 actual—in the annual category or the triennial category—that fall in the top three most extreme of either category.

² We present FY 2016 Gross Alloc. with Triennially Updated Avg. 1984-Formula Factors (FY 2014 – FY 2016) even though it shows the same results as FY 2016 Gross Alloc. with Annually Updated Avg. 1984-Formula Factors (FY 2014 – FY 2016). This is to keep consistent with the presentation of Table A2 and Table A3, in which these results differ.

| Grantee | Actual Gross Allocation for FY 2016 | FY 2016 Gross Alloc. with Annually Updated Avg. 1984-Formula Factors (FY 2012 - FY 2014) | FY 2016 Gross Alloc. with Triennially Updated Avg. 1984-Formula Factors (FY 2012 - FY 2014) ² | FY 2016 Annually Updated Avg. over Actual--Perc. Difference in Allocation | FY 2016 Triennially Updated Avg. over Actual--Perc. Difference in Allocation |
|----------------|-------------------------------------|--|--|---|--|
| Louisiana | \$42,233,740 | \$42,294,024 | \$42,294,024 | 0.14% | 0.14% |
| Maine | \$38,917,389 | \$38,917,389 | \$38,917,389 | 0.00% | 0.00% |
| Maryland | \$72,254,634 | \$69,857,633 | \$69,857,633 | -3.32% | -3.32% |
| Massachusetts | \$148,767,750 | \$134,664,096 | \$134,664,096 | -9.48% | -9.48% |
| Michigan | \$157,859,020 | \$167,701,731 | \$167,701,731 | 6.24% | 6.24% |
| Minnesota | \$113,728,493 | \$113,728,493 | \$113,728,493 | 0.00% | 0.00% |
| Mississippi | \$29,051,131 | \$30,506,164 | \$30,506,164 | 5.01% | 5.01% |
| Missouri | \$73,294,773 | \$68,191,452 | \$68,191,452 | -6.96% | -6.96% |
| Montana | \$23,457,354 | \$23,457,354 | \$23,457,354 | 0.00% | 0.00% |
| Nebraska | \$29,377,218 | \$29,377,218 | \$29,377,218 | 0.00% | 0.00% |
| Nevada | \$9,892,109 | \$11,050,358 | \$11,050,358 | 11.71% | 11.71% |
| New Hampshire | \$26,398,950 | \$25,323,706 | \$25,323,706 | -4.07% | -4.07% |
| New Jersey | \$127,094,199 | \$128,277,603 | \$128,277,603 | 0.93% | 0.93% |
| New Mexico | \$18,766,313 | \$16,595,246 | \$16,595,246 | -11.57% | -11.57% |
| New York | \$364,241,895 | \$364,241,897 | \$364,241,897 | 0.00% | 0.00% |
| North Carolina | \$86,702,402 | \$86,661,893 | \$86,661,893 | -0.05% | -0.05% |
| North Dakota | \$25,481,783 | \$25,481,783 | \$25,481,783 | 0.00% | 0.00% |
| Ohio | \$147,090,880 | \$154,577,131 | \$154,577,131 | 5.09% | 5.09% |
| Oklahoma | \$36,844,135 | \$36,554,303 | \$36,554,303 | -0.79% | -0.79% |
| Oregon | \$35,689,880 | \$35,689,880 | \$35,689,880 | 0.00% | 0.00% |
| Pennsylvania | \$203,405,185 | \$200,741,035 | \$200,741,035 | -1.31% | -1.31% |
| Rhode Island | \$26,001,646 | \$23,825,892 | \$23,825,892 | -8.37% | -8.37% |
| South Carolina | \$34,588,425 | \$38,638,322 | \$38,638,322 | 11.71% | 11.71% |
| South Dakota | \$20,695,670 | \$20,695,670 | \$20,695,670 | 0.00% | 0.00% |
| Tennessee | \$56,100,554 | \$57,047,543 | \$57,047,543 | 1.69% | 1.69% |
| Texas | \$114,644,576 | \$128,068,102 | \$128,068,102 | 11.71% | 11.71% |

| Grantee | Actual Gross Allocation for FY 2016 | FY 2016 Gross Alloc. with Annually Updated Avg. 1984-Formula Factors (FY 2012 - FY 2014) | FY 2016 Gross Alloc. with Triennially Updated Avg. 1984-Formula Factors (FY 2012 - FY 2014) ² | FY 2016 Annually Updated Avg. over Actual--Perc. Difference in Allocation | FY 2016 Triennially Updated Avg. over Actual--Perc. Difference in Allocation |
|---------------|-------------------------------------|--|--|---|--|
| Utah | \$23,825,423 | \$23,825,423 | \$23,825,423 | 0.00% | 0.00% |
| Vermont | \$18,981,020 | \$18,981,020 | \$18,981,020 | 0.00% | 0.00% |
| Virginia | \$83,926,259 | \$80,850,227 | \$80,850,227 | -3.67% | -3.67% |
| Washington | \$58,704,936 | \$58,704,936 | \$58,704,936 | 0.00% | 0.00% |
| West Virginia | \$28,865,924 | \$28,865,924 | \$28,865,924 | 0.00% | 0.00% |
| Wisconsin | \$102,371,974 | \$102,371,974 | \$102,371,974 | 0.00% | 0.00% |
| Wyoming | \$9,539,175 | \$9,539,175 | \$9,539,175 | 0.00% | 0.00% |
| <i>Total</i> | <i>\$3,351,003,785</i> | <i>\$3,351,003,785</i> | <i>\$3,351,003,785</i> | <i>0.00%</i> | <i>0.00%</i> |

Table A2 Actual FY 2017 State Gross Allocations and Hypothetical Allocations with 1984-Formula Factors Averaged for (1) FY 2013 - FY 2015; and (2) FY 2012 - FY 2014³

| Grantee | Actual Gross Allocation for FY 2017 | FY 2017 Gross Alloc. with Annually Updated Avg. 1984-Formula Factors (FY 2013 - FY 2015) | FY 2017 Gross Alloc. with Triennially Updated Avg. 1984-Formula Factors (FY 2012 - FY 2014) | FY 2017 Annually Updated Avg. over Actual--Perc. Difference in Allocation | FY 2017 Triennially Updated Avg. over Actual--Perc. Difference in Allocation |
|-------------|-------------------------------------|--|---|---|--|
| Alabama | \$44,941,278 | \$48,065,656 | \$48,847,140 | 6.95% | 8.69% |
| Alaska | \$17,487,781 | \$17,894,354 | \$17,487,781 | 2.32% | 0.00% |
| Arizona | \$21,734,137 | \$23,426,876 | \$23,729,433 | 7.79% | 9.18% |
| Arkansas | \$26,818,870 | \$27,410,555 | \$27,867,263 | 2.21% | 3.91% |
| California | \$171,344,037 | \$160,508,506 | \$151,746,206 | -6.32% | -11.44% |
| Colorado | \$51,040,984 | \$46,734,614 | \$46,360,647 | -8.44% | -9.17% |
| Connecticut | \$78,713,173 | \$80,981,616 | \$78,536,174 | 2.88% | -0.22% |
| Delaware | \$12,035,851 | \$12,882,446 | \$12,622,107 | 7.03% | 4.87% |

³ The six states with yellow-filled cells have percentage differences from FY 2017 actual—in the annual category or the triennial category—that fall in the top two most extreme of either category.

| Grantee | Actual Gross Allocation for FY 2017 | FY 2017 Gross Alloc. with Annually Updated Avg. 1984-Formula Factors (FY 2013 - FY 2015) | FY 2017 Gross Alloc. with Triennially Updated Avg. 1984-Formula Factors (FY 2012 - FY 2014) | FY 2017 Annually Updated Avg. over Actual--Perc. Difference in Allocation | FY 2017 Triennially Updated Avg. over Actual--Perc. Difference in Allocation |
|----------------------|--|---|--|--|---|
| District of Columbia | \$10,382,114 | \$10,382,114 | \$10,382,114 | 0.00% | 0.00% |
| Florida | \$71,110,522 | \$76,648,884 | \$77,638,803 | 7.79% | 9.18% |
| Georgia | \$56,223,772 | \$60,602,697 | \$61,385,380 | 7.79% | 9.18% |
| Hawaii | \$5,143,448 | \$6,103,028 | \$6,099,701 | 18.66% | 18.59% |
| Idaho | \$19,989,075 | \$19,989,075 | \$19,989,075 | 0.00% | 0.00% |
| Illinois | \$167,395,704 | \$167,395,704 | \$170,733,206 | 0.00% | 1.99% |
| Indiana | \$75,792,072 | \$75,792,072 | \$75,792,072 | 0.00% | 0.00% |
| Iowa | \$53,714,858 | \$53,714,858 | \$53,714,858 | 0.00% | 0.00% |
| Kansas | \$33,605,917 | \$31,558,573 | \$31,875,253 | -6.09% | -5.15% |
| Kentucky | \$48,634,012 | \$46,052,230 | \$46,689,237 | -5.31% | -4.00% |
| Louisiana | \$42,462,057 | \$40,980,050 | \$42,464,387 | -3.49% | 0.01% |
| Maine | \$39,180,816 | \$39,180,816 | \$39,180,816 | 0.00% | 0.00% |
| Maryland | \$74,051,242 | \$70,191,723 | \$70,168,979 | -5.21% | -5.24% |
| Massachusetts | \$147,241,978 | \$140,945,594 | \$135,477,477 | -4.28% | -7.99% |
| Michigan | \$158,927,549 | \$166,106,079 | \$168,770,260 | 4.52% | 6.19% |
| Minnesota | \$114,498,307 | \$114,498,307 | \$114,498,307 | 0.00% | 0.00% |
| Mississippi | \$29,746,159 | \$29,268,703 | \$30,649,031 | -1.61% | 3.04% |
| Missouri | \$73,618,155 | \$71,193,519 | \$68,641,006 | -3.29% | -6.76% |
| Montana | \$23,445,914 | \$23,445,914 | \$23,445,914 | 0.00% | 0.00% |
| Nebraska | \$29,362,891 | \$29,362,891 | \$29,362,891 | 0.00% | 0.00% |
| Nevada | \$10,207,878 | \$11,002,906 | \$11,145,009 | 7.79% | 9.18% |
| New Hampshire | \$28,546,488 | \$25,311,356 | \$25,311,356 | -11.33% | -11.33% |
| New Jersey | \$120,141,895 | \$126,476,448 | \$129,032,701 | 5.27% | 7.40% |
| New Mexico | \$18,600,409 | \$16,587,152 | \$16,587,152 | -10.82% | -10.82% |
| New York | \$366,707,404 | \$366,707,406 | \$366,707,404 | 0.00% | 0.00% |
| North Carolina | \$85,848,491 | \$88,624,372 | \$87,029,329 | 3.23% | 1.38% |

| Grantee | Actual Gross Allocation for FY 2017 | FY 2017 Gross Alloc. with Annually Updated Avg. 1984-Formula Factors (FY 2013 - FY 2015) | FY 2017 Gross Alloc. with Triennially Updated Avg. 1984-Formula Factors (FY 2012 - FY 2014) | FY 2017 Annually Updated Avg. over Actual--Perc. Difference in Allocation | FY 2017 Triennially Updated Avg. over Actual--Perc. Difference in Allocation |
|----------------|-------------------------------------|--|---|---|--|
| North Dakota | \$25,469,355 | \$25,469,355 | \$25,469,355 | 0.00% | 0.00% |
| Ohio | \$148,086,520 | \$148,598,963 | \$155,572,771 | 0.35% | 5.06% |
| Oklahoma | \$37,498,248 | \$36,960,828 | \$36,707,479 | -1.43% | -2.11% |
| Oregon | \$35,931,461 | \$35,931,461 | \$35,931,461 | 0.00% | 0.00% |
| Pennsylvania | \$209,106,656 | \$202,429,663 | \$202,065,377 | -3.19% | -3.37% |
| Rhode Island | \$25,333,324 | \$25,455,806 | \$23,959,779 | 0.48% | -5.42% |
| South Carolina | \$35,692,535 | \$38,472,407 | \$38,969,278 | 7.79% | 9.18% |
| South Dakota | \$20,685,578 | \$20,685,578 | \$20,685,578 | 0.00% | 0.00% |
| Tennessee | \$58,665,764 | \$57,533,557 | \$57,316,168 | -1.93% | -2.30% |
| Texas | \$118,304,182 | \$127,518,169 | \$129,165,066 | 7.79% | 9.18% |
| Utah | \$23,813,803 | \$23,813,803 | \$23,813,803 | 0.00% | 0.00% |
| Vermont | \$18,971,763 | \$18,971,763 | \$18,971,763 | 0.00% | 0.00% |
| Virginia | \$83,571,402 | \$81,957,382 | \$81,229,482 | -1.93% | -2.80% |
| Washington | \$59,102,303 | \$59,102,303 | \$59,102,303 | 0.00% | 0.00% |
| West Virginia | \$28,851,846 | \$28,851,846 | \$28,851,846 | 0.00% | 0.00% |
| Wisconsin | \$103,064,918 | \$103,064,918 | \$103,064,918 | 0.00% | 0.00% |
| Wyoming | \$9,534,524 | \$9,534,524 | \$9,534,524 | 0.00% | 0.00% |
| <i>Total</i> | <i>\$3,370,379,420</i> | <i>\$3,370,379,420</i> | <i>\$3,370,379,420</i> | <i>0.00%</i> | <i>0.00%</i> |

Table A3 Actual FY 2018 State Gross Allocations and Hypothetical Allocations with 1984-Formula Factors Averaged for (1) FY 2014 - FY 2016; and (2) FY 2012 - FY 2014—Through Approach 2⁴ 5

⁴ The figures in this table agree exactly with those in Table A7 Table A3 because the underlying data is identical. We present them in this table to keep consistent with the year-by-year presentation of all figures under each approach.

⁵ The six states with yellow-filled cells have percentage differences from FY 2018 actual—in the annual category or the triennial category—that fall in the top two most extreme of either category.

| Grantee | Actual Gross Allocation for FY 2018 | FY 2018 Gross Alloc. with Annually Updated Avg. 1984-Formula Factors (FY 2014 - FY 2016) | FY 2018 Gross Alloc. with Triennially Updated Avg. 1984-Formula Factors (FY 2012 - FY 2014) | FY 2018 Annually Updated Avg. over Actual--Perc. Difference in Allocation | FY 2018 Triennially Updated Avg. over Actual--Perc. Difference in Allocation |
|----------------------|-------------------------------------|--|---|---|--|
| Alabama | \$51,553,895 | \$49,924,537 | \$52,480,033 | -3.16% | 1.80% |
| Alaska | \$18,779,204 | \$18,779,204 | \$18,779,204 | 0.00% | 0.00% |
| Arizona | \$27,971,948 | \$27,743,394 | \$28,607,374 | -0.82% | 2.27% |
| Arkansas | \$31,134,093 | \$29,529,987 | \$29,924,200 | -5.15% | -3.89% |
| California | \$191,854,615 | \$181,265,624 | \$162,962,675 | -5.52% | -15.06% |
| Colorado | \$53,174,674 | \$51,459,376 | \$49,094,972 | -3.23% | -7.67% |
| Connecticut | \$80,738,355 | \$87,625,780 | \$84,309,574 | 8.53% | 4.42% |
| Delaware | \$13,653,457 | \$13,714,473 | \$13,555,533 | 0.45% | -0.72% |
| District of Columbia | \$11,148,804 | \$11,148,804 | \$11,148,804 | 0.00% | 0.00% |
| Florida | \$91,519,613 | \$90,771,822 | \$93,598,623 | -0.82% | 2.27% |
| Georgia | \$72,360,288 | \$71,769,045 | \$74,004,065 | -0.82% | 2.27% |
| Hawaii | \$5,004,477 | \$6,768,113 | \$6,553,266 | 35.24% | 30.95% |
| Idaho | \$21,465,212 | \$21,465,212 | \$21,465,212 | 0.00% | 0.00% |
| Illinois | \$171,007,959 | \$171,007,959 | \$183,310,105 | 0.00% | 7.19% |
| Indiana | \$77,427,600 | \$77,427,600 | \$78,060,441 | 0.00% | 0.82% |
| Iowa | \$54,873,978 | \$54,873,978 | \$54,873,978 | 0.00% | 0.00% |
| Kansas | \$36,216,862 | \$33,671,842 | \$34,218,087 | -7.03% | -5.52% |
| Kentucky | \$53,571,684 | \$50,338,587 | \$50,110,066 | -6.04% | -6.46% |
| Louisiana | \$48,120,020 | \$44,111,732 | \$45,610,159 | -8.33% | -5.22% |
| Maine | \$40,264,690 | \$41,008,995 | \$40,026,304 | 1.85% | -0.59% |
| Maryland | \$81,679,806 | \$75,324,030 | \$75,352,586 | -7.78% | -7.75% |
| Massachusetts | \$147,723,157 | \$156,382,305 | \$145,485,943 | 5.86% | -1.51% |
| Michigan | \$162,357,068 | \$173,114,512 | \$181,218,378 | 6.63% | 11.62% |
| Minnesota | \$116,969,082 | \$116,969,082 | \$116,969,082 | 0.00% | 0.00% |
| Mississippi | \$32,594,076 | \$31,002,346 | \$32,909,826 | -4.88% | 0.97% |
| Missouri | \$81,052,432 | \$78,012,597 | \$73,698,430 | -3.75% | -9.07% |

| Grantee | Actual Gross Allocation for FY 2018 | FY 2018 Gross Alloc. with Annually Updated Avg. 1984-Formula Factors (FY 2014 - FY 2016) | FY 2018 Gross Alloc. with Triennially Updated Avg. 1984-Formula Factors (FY 2012 - FY 2014) | FY 2018 Annually Updated Avg. over Actual--Perc. Difference in Allocation | FY 2018 Triennially Updated Avg. over Actual--Perc. Difference in Allocation |
|----------------|-------------------------------------|--|---|---|--|
| Montana | \$25,177,329 | \$25,177,329 | \$25,177,329 | 0.00% | 0.00% |
| Nebraska | \$31,531,258 | \$31,531,258 | \$31,531,258 | 0.00% | 0.00% |
| Nevada | \$13,137,592 | \$13,030,246 | \$13,436,033 | -0.82% | 2.27% |
| New Hampshire | \$27,994,431 | \$27,696,012 | \$27,180,530 | -1.07% | -2.91% |
| New Jersey | \$127,410,239 | \$135,426,062 | \$138,572,099 | 6.29% | 8.76% |
| New Mexico | \$19,777,911 | \$18,193,372 | \$17,812,068 | -8.01% | -9.94% |
| New York | \$374,620,636 | \$383,877,069 | \$378,884,298 | 2.47% | 1.14% |
| North Carolina | \$97,446,837 | \$94,010,394 | \$93,467,581 | -3.53% | -4.08% |
| North Dakota | \$27,350,196 | \$27,350,196 | \$27,350,196 | 0.00% | 0.00% |
| Ohio | \$154,050,894 | \$156,161,995 | \$167,043,635 | 1.37% | 8.43% |
| Oklahoma | \$41,885,993 | \$39,663,855 | \$39,423,901 | -5.31% | -5.88% |
| Oregon | \$36,706,831 | \$36,706,831 | \$36,706,831 | 0.00% | 0.00% |
| Pennsylvania | \$214,780,545 | \$219,404,227 | \$216,953,085 | 2.15% | 1.01% |
| Rhode Island | \$26,903,933 | \$27,719,586 | \$25,716,335 | 3.03% | -4.41% |
| South Carolina | \$43,107,127 | \$42,147,155 | \$42,020,061 | -2.23% | -2.52% |
| South Dakota | \$22,213,149 | \$22,213,149 | \$22,213,149 | 0.00% | 0.00% |
| Tennessee | \$63,972,029 | \$60,895,318 | \$61,543,329 | -4.81% | -3.80% |
| Texas | \$152,258,101 | \$151,014,027 | \$155,716,882 | -0.82% | 2.27% |
| Utah | \$25,572,386 | \$25,572,386 | \$25,572,386 | 0.00% | 0.00% |
| Vermont | \$20,372,775 | \$20,372,775 | \$20,372,775 | 0.00% | 0.00% |
| Virginia | \$91,754,433 | \$88,867,496 | \$87,220,993 | -3.15% | -4.94% |
| Washington | \$60,377,680 | \$60,377,680 | \$60,377,680 | 0.00% | 0.00% |
| West Virginia | \$30,982,475 | \$30,982,475 | \$30,982,475 | 0.00% | 0.00% |
| Wisconsin | \$105,288,970 | \$105,288,970 | \$105,288,970 | 0.00% | 0.00% |
| Wyoming | \$10,238,621 | \$10,238,621 | \$10,238,621 | 0.00% | 0.00% |
| Total | \$3,619,129,420 | \$3,619,129,420 | \$3,619,129,420 | 0.00% | 0.00% |

Table A4 Actual FY 2019 State Gross Allocations and Hypothetical Allocations with 1984-Formula Factors Averaged for FY 2015 - FY 2017 (Annually and Triennially)⁶

| Grantee | Actual Gross Allocation for FY 2019 | FY 2019 Gross Alloc. with Annually Updated Avg. 1984-Formula Factors (FY 2015 - FY 2017) | FY 2019 Gross Alloc. with Triennially Updated Avg. 1984-Formula Factors (FY 2015 - FY 2017) ⁷ | FY 2019 Annually Updated Avg. over Actual--Perc. Difference in Allocation | FY 2019 Triennially Updated Avg. over Actual--Perc. Difference in Allocation |
|----------------------|-------------------------------------|--|--|---|--|
| Alabama | \$54,194,918 | \$48,487,081 | \$48,487,081 | -10.53% | -10.53% |
| Alaska | \$18,846,959 | \$18,846,958 | \$18,846,958 | 0.00% | 0.00% |
| Arizona | \$29,578,632 | \$27,605,517 | \$27,605,517 | -6.67% | -6.67% |
| Arkansas | \$30,550,546 | \$29,336,852 | \$29,336,852 | -3.97% | -3.97% |
| California | \$205,096,658 | \$188,228,872 | \$188,228,872 | -8.22% | -8.22% |
| Colorado | \$53,793,334 | \$53,584,603 | \$53,584,603 | -0.39% | -0.39% |
| Connecticut | \$75,290,878 | \$88,297,643 | \$88,297,643 | 17.28% | 17.28% |
| Delaware | \$12,954,982 | \$13,380,862 | \$13,380,862 | 3.29% | 3.29% |
| District of Columbia | \$11,189,028 | \$11,189,028 | \$11,189,028 | 0.00% | 0.00% |
| Florida | \$96,776,424 | \$90,320,707 | \$90,320,707 | -6.67% | -6.67% |
| Georgia | \$76,516,601 | \$71,412,369 | \$71,412,369 | -6.67% | -6.67% |
| Hawaii | \$5,010,952 | \$6,236,202 | \$6,236,202 | 24.45% | 24.45% |
| Idaho | \$21,542,658 | \$21,542,658 | \$21,542,658 | 0.00% | 0.00% |
| Illinois | \$172,194,747 | \$170,011,714 | \$170,011,714 | -1.27% | -1.27% |
| Indiana | \$76,976,528 | \$76,976,528 | \$76,976,528 | 0.00% | 0.00% |
| Iowa | \$54,554,297 | \$54,554,297 | \$54,554,297 | 0.00% | 0.00% |
| Kansas | \$36,513,752 | \$34,689,343 | \$34,689,343 | -5.00% | -5.00% |
| Kentucky | \$54,725,461 | \$50,546,135 | \$50,546,135 | -7.64% | -7.64% |

⁶ The six states with yellow-filled cells have percentage differences from FY 2019 actual—in the annual category or the triennial category—that fall in the top three most extreme of either category.

⁷ We present FY 2019 Gross Alloc. with Triennially Updated Avg. 1984-Formula Factors (FY 2015 – FY 2017) even though it shows the same results as FY 2019 Gross Alloc. with Annually Updated Avg. 1984-Formula Factors (2015 – FY 2017). This is to keep consistent with the presentation of Table A2 and Table A3, in which these results differ.

| Grantee | Actual Gross Allocation for FY 2019 | FY 2019 Gross Alloc. with Annually Updated Avg. 1984-Formula Factors (FY 2015 - FY 2017) | FY 2019 Gross Alloc. with Triennially Updated Avg. 1984-Formula Factors (FY 2015 - FY 2017) ⁷ | FY 2019 Annually Updated Avg. over Actual--Perc. Difference in Allocation | FY 2019 Triennially Updated Avg. over Actual--Perc. Difference in Allocation |
|----------------|-------------------------------------|--|--|---|--|
| Louisiana | \$50,898,734 | \$44,348,210 | \$44,348,210 | -12.87% | -12.87% |
| Maine | \$39,793,122 | \$41,343,883 | \$41,343,883 | 3.90% | 3.90% |
| Maryland | \$78,970,511 | \$77,530,120 | \$77,530,120 | -1.82% | -1.82% |
| Massachusetts | \$136,483,517 | \$159,354,462 | \$159,354,462 | 16.76% | 16.76% |
| Michigan | \$166,348,572 | \$168,895,646 | \$168,895,646 | 1.53% | 1.53% |
| Minnesota | \$116,287,653 | \$116,287,653 | \$116,287,653 | 0.00% | 0.00% |
| Mississippi | \$32,271,091 | \$30,917,426 | \$30,917,426 | -4.19% | -4.19% |
| Missouri | \$80,216,571 | \$79,378,884 | \$79,378,884 | -1.04% | -1.04% |
| Montana | \$25,268,170 | \$25,268,170 | \$25,268,170 | 0.00% | 0.00% |
| Nebraska | \$31,645,024 | \$31,645,024 | \$31,645,024 | 0.00% | 0.00% |
| Nevada | \$13,892,204 | \$12,965,489 | \$12,965,489 | -6.67% | -6.67% |
| New Hampshire | \$27,278,597 | \$29,156,446 | \$29,156,446 | 6.88% | 6.88% |
| New Jersey | \$124,026,908 | \$134,401,672 | \$134,401,672 | 8.36% | 8.36% |
| New Mexico | \$21,002,821 | \$19,891,317 | \$19,891,317 | -5.29% | -5.29% |
| New York | \$372,438,199 | \$387,603,746 | \$387,603,746 | 4.07% | 4.07% |
| North Carolina | \$98,541,975 | \$93,314,071 | \$93,314,071 | -5.31% | -5.31% |
| North Dakota | \$27,448,877 | \$27,448,877 | \$27,448,877 | 0.00% | 0.00% |
| Ohio | \$154,948,345 | \$152,741,490 | \$152,741,490 | -1.42% | -1.42% |
| Oklahoma | \$43,405,049 | \$39,877,308 | \$39,877,308 | -8.13% | -8.13% |
| Oregon | \$36,492,988 | \$36,492,988 | \$36,492,988 | 0.00% | 0.00% |
| Pennsylvania | \$206,487,864 | \$222,627,250 | \$222,627,250 | 7.82% | 7.82% |
| Rhode Island | \$23,722,645 | \$28,343,214 | \$28,343,214 | 19.48% | 19.48% |
| South Carolina | \$45,497,728 | \$41,423,916 | \$41,423,916 | -8.95% | -8.95% |
| South Dakota | \$22,293,295 | \$22,293,295 | \$22,293,295 | 0.00% | 0.00% |
| Tennessee | \$65,651,305 | \$61,239,804 | \$61,239,804 | -6.72% | -6.72% |
| Texas | \$161,003,678 | \$150,263,520 | \$150,263,520 | -6.67% | -6.67% |

| Grantee | Actual Gross Allocation for FY 2019 | FY 2019 Gross Alloc. with Annually Updated Avg. 1984-Formula Factors (FY 2015 - FY 2017) | FY 2019 Gross Alloc. with Triennially Updated Avg. 1984-Formula Factors (FY 2015 - FY 2017) ⁷ | FY 2019 Annually Updated Avg. over Actual--Perc. Difference in Allocation | FY 2019 Triennially Updated Avg. over Actual--Perc. Difference in Allocation |
|---------------|-------------------------------------|--|--|---|--|
| Utah | \$25,664,652 | \$25,664,652 | \$25,664,652 | 0.00% | 0.00% |
| Vermont | \$20,446,280 | \$20,446,280 | \$20,446,280 | 0.00% | 0.00% |
| Virginia | \$91,298,337 | \$89,677,368 | \$89,677,368 | -1.78% | -1.78% |
| Washington | \$60,083,420 | \$60,025,937 | \$60,025,937 | -0.10% | -0.10% |
| West Virginia | \$31,094,260 | \$31,094,260 | \$31,094,260 | 0.00% | 0.00% |
| Wisconsin | \$104,675,585 | \$104,675,585 | \$104,675,585 | 0.00% | 0.00% |
| Wyoming | \$10,275,562 | \$10,275,562 | \$10,275,562 | 0.00% | 0.00% |
| <i>Total</i> | <i>\$3,632,160,894</i> | <i>\$3,632,160,894</i> | <i>\$3,632,160,894</i> | <i>0.00%</i> | <i>0.00%</i> |

Approach 3 Revisions to LIHEE Only and Update Timespans Ending Two-Years Prior—FY 2016 through FY 2019

Approach 3 updates only the LIHEE, using top-line actuals and calculation methodologies applicable to FY 2018. See Table 14 of the report's body for a summary of those actuals and methodologies. This contrasts with Approach 1 and Approach 2, each of which updated, in addition to the LIHEE, the other fiscal year conditions that varied from year to year.

In addition, Approach 3 uses, for each LIHEE update (whether annual or triennial), the three-year average of estimated LIHEE for the period ending two years before the year of interest. This contrasts with Approach 1, which used the period ending on the year of interest.

The FY 2016 through FY 2019 allocations that result from each method under this approach appear in Table A5 through Table A8 of this Appendix. The equivalent FY 2020 allocations appear in Table 21 of the report's body.

Table A5 FY 2016 Hypothetical State Gross Allocations with 1984-Formula Factors (1) Unchanged from FY 2016; and (2) Averaged for FY 2012 - FY 2014 (Annually and Triennially)⁸

| Grantee | Hypothetical Gross Allocation for FY 2016- Using FY 2018 Top-Lines and FY 2016 1984-Formula Factors | FY 2016 Gross Alloc. with Annually Updated Average 1984-Formula Factors (FY 2012 - FY 2014) | FY 2016 Gross Alloc. with Triennially Updated Average 1984-Formula Factors (FY 2012 - FY 2014) ⁹ | FY 2016 Annually Updated Avg. over Actual--Perc. Difference in Allocation | FY 2016 Triennially Updated Avg. over Actual--Perc. Difference in Allocation |
|----------------------|---|---|---|---|--|
| Alabama | \$48,717,372 | \$52,480,033 | \$52,480,033 | 7.72% | 7.72% |
| Alaska | \$18,779,204 | \$18,779,204 | \$18,779,204 | 0.00% | 0.00% |
| Arizona | \$27,098,419 | \$28,607,374 | \$28,607,374 | 5.57% | 5.57% |
| Arkansas | \$30,055,688 | \$29,924,200 | \$29,924,200 | -0.44% | -0.44% |
| California | \$191,199,179 | \$162,962,675 | \$162,962,675 | -14.77% | -14.77% |
| Colorado | \$52,951,459 | \$49,094,972 | \$49,094,972 | -7.28% | -7.28% |
| Connecticut | \$87,079,937 | \$84,309,574 | \$84,309,574 | -3.18% | -3.18% |
| Delaware | \$13,563,699 | \$13,555,533 | \$13,555,533 | -0.06% | -0.06% |
| District of Columbia | \$11,148,804 | \$11,148,804 | \$11,148,804 | 0.00% | 0.00% |
| Florida | \$88,661,572 | \$93,598,623 | \$93,598,623 | 5.57% | 5.57% |
| Georgia | \$70,100,568 | \$74,004,065 | \$74,004,065 | 5.57% | 5.57% |
| Hawaii | \$6,265,431 | \$6,553,266 | \$6,553,266 | 4.59% | 4.59% |
| Idaho | \$21,465,212 | \$21,465,212 | \$21,465,212 | 0.00% | 0.00% |
| Illinois | \$171,007,959 | \$183,310,105 | \$183,310,105 | 7.19% | 7.19% |
| Indiana | \$77,427,600 | \$78,060,441 | \$78,060,441 | 0.82% | 0.82% |
| Iowa | \$54,873,978 | \$54,873,978 | \$54,873,978 | 0.00% | 0.00% |
| Kansas | \$34,451,561 | \$34,218,087 | \$34,218,087 | -0.68% | -0.68% |
| Kentucky | \$50,430,607 | \$50,110,066 | \$50,110,066 | -0.64% | -0.64% |
| Louisiana | \$45,551,726 | \$45,610,159 | \$45,610,159 | 0.13% | 0.13% |

⁸ The six states with yellow-filled cells have percentage differences from single-year FY 2016 hypothetical gross allocations—in the annual category or the triennial category—that fall in the top three most extreme of either category.

⁹ We present FY 2016 Gross Alloc. with Triennially Updated Avg. 1984-Formula Factors (FY 2012 - FY 2014) even though it shows the same results as FY 2016 Gross Alloc. with Annually Updated Avg. 1984-Formula Factors (FY 2012 - FY 2014). This is to keep consistent with the presentation of Table A6 and Table A7, in which these results differ.

| Grantee | Hypothetical Gross Allocation for FY 2016- Using FY 2018 Top-Lines and FY 2016 1984-Formula Factors | FY 2016 Gross Alloc. with Annually Updated Average 1984-Formula Factors (FY 2012 - FY 2014) | FY 2016 Gross Alloc. with Triennially Updated Average 1984-Formula Factors (FY 2012 - FY 2014)⁹ | FY 2016 Annually Updated Avg. over Actual--Perc. Difference in Allocation | FY 2016 Triennially Updated Avg. over Actual--Perc. Difference in Allocation |
|----------------|--|--|---|--|---|
| Maine | \$41,350,739 | \$40,026,304 | \$40,026,304 | -3.20% | -3.20% |
| Maryland | \$77,943,598 | \$75,352,586 | \$75,352,586 | -3.32% | -3.32% |
| Massachusetts | \$160,588,993 | \$145,485,943 | \$145,485,943 | -9.40% | -9.40% |
| Michigan | \$168,628,599 | \$181,218,378 | \$181,218,378 | 7.47% | 7.47% |
| Minnesota | \$116,969,082 | \$116,969,082 | \$116,969,082 | 0.00% | 0.00% |
| Mississippi | \$31,349,555 | \$32,909,826 | \$32,909,826 | 4.98% | 4.98% |
| Missouri | \$79,189,778 | \$73,698,430 | \$73,698,430 | -6.93% | -6.93% |
| Montana | \$25,177,329 | \$25,177,329 | \$25,177,329 | 0.00% | 0.00% |
| Nebraska | \$31,531,258 | \$31,531,258 | \$31,531,258 | 0.00% | 0.00% |
| Nevada | \$12,727,321 | \$13,436,033 | \$13,436,033 | 5.57% | 5.57% |
| New Hampshire | \$28,516,480 | \$27,180,530 | \$27,180,530 | -4.68% | -4.68% |
| New Jersey | \$137,298,715 | \$138,572,099 | \$138,572,099 | 0.93% | 0.93% |
| New Mexico | \$20,256,431 | \$17,812,068 | \$17,812,068 | -12.07% | -12.07% |
| New York | \$374,620,637 | \$378,884,298 | \$378,884,298 | 1.14% | 1.14% |
| North Carolina | \$93,525,047 | \$93,467,581 | \$93,467,581 | -0.06% | -0.06% |
| North Dakota | \$27,350,196 | \$27,350,196 | \$27,350,196 | 0.00% | 0.00% |
| Ohio | \$151,580,618 | \$167,043,635 | \$167,043,635 | 10.20% | 10.20% |
| Oklahoma | \$39,741,555 | \$39,423,901 | \$39,423,901 | -0.80% | -0.80% |
| Oregon | \$36,706,831 | \$36,706,831 | \$36,706,831 | 0.00% | 0.00% |
| Pennsylvania | \$219,819,801 | \$216,953,085 | \$216,953,085 | -1.30% | -1.30% |
| Rhode Island | \$28,062,578 | \$25,716,335 | \$25,716,335 | -8.36% | -8.36% |
| South Carolina | \$41,735,262 | \$42,020,061 | \$42,020,061 | 0.68% | 0.68% |
| South Dakota | \$22,213,149 | \$22,213,149 | \$22,213,149 | 0.00% | 0.00% |
| Tennessee | \$60,534,481 | \$61,543,329 | \$61,543,329 | 1.67% | 1.67% |
| Texas | \$147,503,275 | \$155,716,882 | \$155,716,882 | 5.57% | 5.57% |
| Utah | \$25,572,386 | \$25,572,386 | \$25,572,386 | 0.00% | 0.00% |

| Grantee | Hypothetical Gross Allocation for FY 2016- Using FY 2018 Top-Lines and FY 2016 1984-Formula Factors | FY 2016 Gross Alloc. with Annually Updated Average 1984-Formula Factors (FY 2012 - FY 2014) | FY 2016 Gross Alloc. with Triennially Updated Average 1984-Formula Factors (FY 2012 - FY 2014) ⁹ | FY 2016 Annually Updated Avg. over Actual--Perc. Difference in Allocation | FY 2016 Triennially Updated Avg. over Actual--Perc. Difference in Allocation |
|---------------|---|---|---|---|--|
| Vermont | \$20,372,775 | \$20,372,775 | \$20,372,775 | 0.00% | 0.00% |
| Virginia | \$90,545,230 | \$87,220,993 | \$87,220,993 | -3.67% | -3.67% |
| Washington | \$60,377,680 | \$60,377,680 | \$60,377,680 | 0.00% | 0.00% |
| West Virginia | \$30,982,475 | \$30,982,475 | \$30,982,475 | 0.00% | 0.00% |
| Wisconsin | \$105,288,970 | \$105,288,970 | \$105,288,970 | 0.00% | 0.00% |
| Wyoming | \$10,238,621 | \$10,238,621 | \$10,238,621 | 0.00% | 0.00% |
| <i>Total</i> | <i>\$3,619,129,420</i> | <i>\$3,619,129,420</i> | <i>\$3,619,129,420</i> | <i>0.00%</i> | <i>0.00%</i> |

Table A6 FY 2017 Hypothetical State Gross Allocations with 1984-Formula Factors (1) Unchanged from FY 2017; (2) Averaged for FY 2013 - FY 2015; and (3) Averaged for FY 2012 - FY 2014¹⁰

| Grantee | Hypothetical Gross Allocation for FY 2017- Using FY 2018 Top-Lines and FY 2017 1984-Formula Factors | FY 2017 Gross Alloc. with Annually Updated Average 1984-Formula Factors (FY 2013 - FY 2015) | FY 2017 Gross Alloc. with Triennially Updated Average 1984-Formula Factors (FY 2012 - FY 2014) | FY 2017 Annually Updated Avg. over Actual--Perc. Difference in Allocation | FY 2017 Triennially Updated Avg. over Actual--Perc. Difference in Allocation |
|----------------------|---|---|--|---|--|
| Alabama | \$48,389,231 | \$51,641,842 | \$52,480,033 | 6.72% | 8.45% |
| Alaska | \$18,779,204 | \$19,216,690 | \$18,779,204 | 2.33% | 0.00% |
| Arizona | \$27,753,078 | \$28,327,206 | \$28,607,374 | 2.07% | 3.08% |
| Arkansas | \$28,801,177 | \$29,434,837 | \$29,924,200 | 2.20% | 3.90% |
| California | \$183,972,390 | \$172,291,808 | \$162,962,675 | -6.35% | -11.42% |
| Colorado | \$54,809,770 | \$50,175,970 | \$49,094,972 | -8.45% | -10.43% |
| Connecticut | \$84,516,284 | \$86,947,571 | \$84,309,574 | 2.88% | -0.24% |
| Delaware | \$12,926,859 | \$13,836,545 | \$13,555,533 | 7.04% | 4.86% |
| District of Columbia | \$11,148,804 | \$11,148,804 | \$11,148,804 | 0.00% | 0.00% |

¹⁰ The five states with yellow-filled cells have percentage differences from single-year FY 2017 hypothetical gross allocations—in the annual category or the triennial category—that fall in the top three most extreme of either category.

| Grantee | Hypothetical Gross Allocation for FY 2017- Using FY 2018 Top-Lines and FY 2017 1984- Formula Factors | FY 2017 Gross Alloc. with Annually Updated Average 1984-Formula Factors (FY 2013 - FY 2015) | FY 2017 Gross Alloc. with Triennially Updated Average 1984- Formula Factors (FY 2012 - FY 2014) | FY 2017 Annually Updated Avg. over Actual--Perc. Difference in Allocation | FY 2017 Triennially Updated Avg. over Actual--Perc. Difference in Allocation |
|----------------|---|--|--|--|---|
| Florida | \$90,803,508 | \$92,681,957 | \$93,598,623 | 2.07% | 3.08% |
| Georgia | \$71,794,098 | \$73,279,300 | \$74,004,065 | 2.07% | 3.08% |
| Hawaii | \$5,525,144 | \$6,676,179 | \$6,553,266 | 20.83% | 18.61% |
| Idaho | \$21,465,212 | \$21,465,212 | \$21,465,212 | 0.00% | 0.00% |
| Illinois | \$174,353,559 | \$172,975,230 | \$183,310,105 | -0.79% | 5.14% |
| Indiana | \$77,427,600 | \$77,427,600 | \$78,060,441 | 0.00% | 0.82% |
| Iowa | \$54,873,978 | \$54,873,978 | \$54,873,978 | 0.00% | 0.00% |
| Kansas | \$36,086,970 | \$33,880,028 | \$34,218,087 | -6.12% | -5.18% |
| Kentucky | \$52,213,310 | \$49,458,427 | \$50,110,066 | -5.28% | -4.03% |
| Louisiana | \$45,614,462 | \$44,015,736 | \$45,610,159 | -3.50% | -0.01% |
| Maine | \$41,255,358 | \$40,026,304 | \$40,026,304 | -2.98% | -2.98% |
| Maryland | \$79,542,478 | \$75,382,127 | \$75,352,586 | -5.23% | -5.27% |
| Massachusetts | \$158,073,780 | \$151,369,823 | \$145,485,943 | -4.24% | -7.96% |
| Michigan | \$163,092,952 | \$178,351,627 | \$181,218,378 | 9.36% | 11.11% |
| Minnesota | \$116,969,082 | \$116,969,082 | \$116,969,082 | 0.00% | 0.00% |
| Mississippi | \$31,944,015 | \$31,426,871 | \$32,909,826 | -1.62% | 3.02% |
| Missouri | \$79,054,012 | \$76,445,022 | \$73,698,430 | -3.30% | -6.77% |
| Montana | \$25,177,329 | \$25,177,329 | \$25,177,329 | 0.00% | 0.00% |
| Nebraska | \$31,531,258 | \$31,531,258 | \$31,531,258 | 0.00% | 0.00% |
| Nevada | \$13,034,795 | \$13,304,445 | \$13,436,033 | 2.07% | 3.08% |
| New Hampshire | \$30,648,171 | \$27,180,530 | \$27,180,530 | -11.31% | -11.31% |
| New Jersey | \$129,005,288 | \$135,821,483 | \$138,572,099 | 5.28% | 7.42% |
| New Mexico | \$19,969,573 | \$17,812,068 | \$17,812,068 | -10.80% | -10.80% |
| New York | \$376,365,462 | \$383,596,575 | \$378,884,298 | 1.92% | 0.67% |
| North Carolina | \$92,211,647 | \$95,189,883 | \$93,467,581 | 3.23% | 1.36% |
| North Dakota | \$27,350,196 | \$27,350,196 | \$27,350,196 | 0.00% | 0.00% |

| Grantee | Hypothetical Gross Allocation for FY 2017- Using FY 2018 Top-Lines and FY 2017 1984-Formula Factors | FY 2017 Gross Alloc. with Annually Updated Average 1984-Formula Factors (FY 2013 - FY 2015) | FY 2017 Gross Alloc. with Triennially Updated Average 1984-Formula Factors (FY 2012 - FY 2014) | FY 2017 Annually Updated Avg. over Actual--Perc. Difference in Allocation | FY 2017 Triennially Updated Avg. over Actual--Perc. Difference in Allocation |
|----------------|---|---|--|---|--|
| Ohio | \$153,755,862 | \$159,539,581 | \$167,043,635 | 3.76% | 8.64% |
| Oklahoma | \$40,280,918 | \$39,699,006 | \$39,423,901 | -1.44% | -2.13% |
| Oregon | \$36,706,831 | \$36,706,831 | \$36,706,831 | 0.00% | 0.00% |
| Pennsylvania | \$224,529,741 | \$217,345,069 | \$216,953,085 | -3.20% | -3.37% |
| Rhode Island | \$27,199,669 | \$27,328,291 | \$25,716,335 | 0.47% | -5.45% |
| South Carolina | \$41,301,153 | \$42,791,158 | \$42,020,061 | 3.61% | 1.74% |
| South Dakota | \$22,213,149 | \$22,213,149 | \$22,213,149 | 0.00% | 0.00% |
| Tennessee | \$63,006,277 | \$61,781,620 | \$61,543,329 | -1.94% | -2.32% |
| Texas | \$151,066,741 | \$154,191,854 | \$155,716,882 | 2.07% | 3.08% |
| Utah | \$25,572,386 | \$25,572,386 | \$25,572,386 | 0.00% | 0.00% |
| Vermont | \$20,372,775 | \$20,372,775 | \$20,372,775 | 0.00% | 0.00% |
| Virginia | \$89,756,138 | \$88,010,411 | \$87,220,993 | -1.94% | -2.82% |
| Washington | \$60,377,680 | \$60,377,680 | \$60,377,680 | 0.00% | 0.00% |
| West Virginia | \$30,982,475 | \$30,982,475 | \$30,982,475 | 0.00% | 0.00% |
| Wisconsin | \$105,288,970 | \$105,288,970 | \$105,288,970 | 0.00% | 0.00% |
| Wyoming | \$10,238,621 | \$10,238,621 | \$10,238,621 | 0.00% | 0.00% |
| <i>Total</i> | <i>\$3,619,129,420</i> | <i>\$3,619,129,420</i> | <i>\$3,619,129,420</i> | <i>0.00%</i> | <i>0.00%</i> |

Table A7 Actual FY 2018 State Gross Allocations and Hypothetical Allocations with 1984-Formula Factors Averaged for (1) FY 2014 - FY 2016; and (2) FY 2012 - FY 2014—Through Approach 3^{11 12}

¹¹ The figures in this table agree exactly with those in Table A3 because the underlying data is identical. We present them in this table to keep consistent with the year-by-year presentation of all figures under each approach.

¹² The six states with yellow-filled cells have percentage differences from single-year FY 2018 hypothetical gross allocations—in the annual category or the triennial category—that fall in the top two most extreme of either category.

| Grantee | Actual Gross Allocation for FY 2018 | FY 2018 Gross Alloc. with Annually Updated Average 1984-Formula Factors (FY 2014 - FY 2016) | FY 2018 Gross Alloc. with Triennially Updated Average 1984-Formula Factors (FY 2012 - FY 2014) ¹³ | FY 2018 Annually Updated Avg. over Actual--Perc. Difference in Allocation | FY 2018 Triennially Updated Avg. over Actual--Perc. Difference in Allocation |
|----------------------|-------------------------------------|---|--|---|--|
| Alabama | \$51,553,895 | \$49,924,537 | \$52,480,033 | -3.16% | 1.80% |
| Alaska | \$18,779,204 | \$18,779,204 | \$18,779,204 | 0.00% | 0.00% |
| Arizona | \$27,971,948 | \$27,743,394 | \$28,607,374 | -0.82% | 2.27% |
| Arkansas | \$31,134,093 | \$29,529,987 | \$29,924,200 | -5.15% | -3.89% |
| California | \$191,854,615 | \$181,265,624 | \$162,962,675 | -5.52% | -15.06% |
| Colorado | \$53,174,674 | \$51,459,376 | \$49,094,972 | -3.23% | -7.67% |
| Connecticut | \$80,738,355 | \$87,625,780 | \$84,309,574 | 8.53% | 4.42% |
| Delaware | \$13,653,457 | \$13,714,473 | \$13,555,533 | 0.45% | -0.72% |
| District of Columbia | \$11,148,804 | \$11,148,804 | \$11,148,804 | 0.00% | 0.00% |
| Florida | \$91,519,613 | \$90,771,822 | \$93,598,623 | -0.82% | 2.27% |
| Georgia | \$72,360,288 | \$71,769,045 | \$74,004,065 | -0.82% | 2.27% |
| Hawaii | \$5,004,477 | \$6,768,113 | \$6,553,266 | 35.24% | 30.95% |
| Idaho | \$21,465,212 | \$21,465,212 | \$21,465,212 | 0.00% | 0.00% |
| Illinois | \$171,007,959 | \$171,007,959 | \$183,310,105 | 0.00% | 7.19% |
| Indiana | \$77,427,600 | \$77,427,600 | \$78,060,441 | 0.00% | 0.82% |
| Iowa | \$54,873,978 | \$54,873,978 | \$54,873,978 | 0.00% | 0.00% |
| Kansas | \$36,216,862 | \$33,671,842 | \$34,218,087 | -7.03% | -5.52% |
| Kentucky | \$53,571,684 | \$50,338,587 | \$50,110,066 | -6.04% | -6.46% |
| Louisiana | \$48,120,020 | \$44,111,732 | \$45,610,159 | -8.33% | -5.22% |
| Maine | \$40,264,690 | \$41,008,995 | \$40,026,304 | 1.85% | -0.59% |
| Maryland | \$81,679,806 | \$75,324,030 | \$75,352,586 | -7.78% | -7.75% |
| Massachusetts | \$147,723,157 | \$156,382,305 | \$145,485,943 | 5.86% | -1.51% |

¹³ We present **Gross Alloc. with Triennially Updated Avg. 1984-Formula Factors (FY 2015 - FY 2017)** even though it shows the same results as **Gross Alloc. with Annually Updated Avg. 1984-Formula Factors (FY 2015 - FY 2017)**. This is to keep consistent with the presentation of Table A6 and Table A7, in which these results differ.

| Grantee | Actual Gross Allocation for FY 2018 | FY 2018 Gross Alloc. with Annually Updated Average 1984-Formula Factors (FY 2014 - FY 2016) | FY 2018 Gross Alloc. with Triennially Updated Average 1984-Formula Factors (FY 2012 - FY 2014) ¹³ | FY 2018 Annually Updated Avg. over Actual--Perc. Difference in Allocation | FY 2018 Triennially Updated Avg. over Actual--Perc. Difference in Allocation |
|----------------|-------------------------------------|---|--|---|--|
| Michigan | \$162,357,068 | \$173,114,512 | \$181,218,378 | 6.63% | 11.62% |
| Minnesota | \$116,969,082 | \$116,969,082 | \$116,969,082 | 0.00% | 0.00% |
| Mississippi | \$32,594,076 | \$31,002,346 | \$32,909,826 | -4.88% | 0.97% |
| Missouri | \$81,052,432 | \$78,012,597 | \$73,698,430 | -3.75% | -9.07% |
| Montana | \$25,177,329 | \$25,177,329 | \$25,177,329 | 0.00% | 0.00% |
| Nebraska | \$31,531,258 | \$31,531,258 | \$31,531,258 | 0.00% | 0.00% |
| Nevada | \$13,137,592 | \$13,030,246 | \$13,436,033 | -0.82% | 2.27% |
| New Hampshire | \$27,994,431 | \$27,696,012 | \$27,180,530 | -1.07% | -2.91% |
| New Jersey | \$127,410,239 | \$135,426,062 | \$138,572,099 | 6.29% | 8.76% |
| New Mexico | \$19,777,911 | \$18,193,372 | \$17,812,068 | -8.01% | -9.94% |
| New York | \$374,620,636 | \$383,877,069 | \$378,884,298 | 2.47% | 1.14% |
| North Carolina | \$97,446,837 | \$94,010,394 | \$93,467,581 | -3.53% | -4.08% |
| North Dakota | \$27,350,196 | \$27,350,196 | \$27,350,196 | 0.00% | 0.00% |
| Ohio | \$154,050,894 | \$156,161,995 | \$167,043,635 | 1.37% | 8.43% |
| Oklahoma | \$41,885,993 | \$39,663,855 | \$39,423,901 | -5.31% | -5.88% |
| Oregon | \$36,706,831 | \$36,706,831 | \$36,706,831 | 0.00% | 0.00% |
| Pennsylvania | \$214,780,545 | \$219,404,227 | \$216,953,085 | 2.15% | 1.01% |
| Rhode Island | \$26,903,933 | \$27,719,586 | \$25,716,335 | 3.03% | -4.41% |
| South Carolina | \$43,107,127 | \$42,147,155 | \$42,020,061 | -2.23% | -2.52% |
| South Dakota | \$22,213,149 | \$22,213,149 | \$22,213,149 | 0.00% | 0.00% |
| Tennessee | \$63,972,029 | \$60,895,318 | \$61,543,329 | -4.81% | -3.80% |
| Texas | \$152,258,101 | \$151,014,027 | \$155,716,882 | -0.82% | 2.27% |
| Utah | \$25,572,386 | \$25,572,386 | \$25,572,386 | 0.00% | 0.00% |
| Vermont | \$20,372,775 | \$20,372,775 | \$20,372,775 | 0.00% | 0.00% |
| Virginia | \$91,754,433 | \$88,867,496 | \$87,220,993 | -3.15% | -4.94% |
| Washington | \$60,377,680 | \$60,377,680 | \$60,377,680 | 0.00% | 0.00% |

| Grantee | Actual Gross Allocation for FY 2018 | FY 2018 Gross Alloc. with Annually Updated Average 1984-Formula Factors (FY 2014 - FY 2016) | FY 2018 Gross Alloc. with Triennially Updated Average 1984-Formula Factors (FY 2012 - FY 2014) ¹³ | FY 2018 Annually Updated Avg. over Actual--Perc. Difference in Allocation | FY 2018 Triennially Updated Avg. over Actual--Perc. Difference in Allocation |
|---------------|-------------------------------------|---|--|---|--|
| West Virginia | \$30,982,475 | \$30,982,475 | \$30,982,475 | 0.00% | 0.00% |
| Wisconsin | \$105,288,970 | \$105,288,970 | \$105,288,970 | 0.00% | 0.00% |
| Wyoming | \$10,238,621 | \$10,238,621 | \$10,238,621 | 0.00% | 0.00% |
| <i>Total</i> | \$3,619,129,420 | \$3,619,129,420 | \$3,619,129,420 | 0.00% | 0.00% |

Table A8 FY 2019 Hypothetical State Gross Allocations with 1984-Formula Factors (1) Unchanged from FY 2019; and (2) Averaged for FY 2015 - FY 2017 (Annually and Triennially)¹⁴

| Grantee | Hypothetical Gross Allocation for FY 2019- Using FY 2018 Top-Lines and FY 2019 1984-Formula Factors | FY 2019 Gross Alloc. with Annually Updated Average 1984-Formula Factors (FY 2015 - FY 2017) | FY 2019 Gross Alloc. with Triennially Updated Average 1984-Formula Factors (FY 2015 - FY 2017) ¹⁵ | FY 2019 Annually Updated Avg. over Actual--Perc. Difference in Allocation | FY 2019 Triennially Updated Avg. over Actual--Perc. Difference in Allocation |
|----------------------|---|---|--|---|--|
| Alabama | \$53,994,431 | \$48,308,388 | \$48,308,388 | -10.53% | -10.53% |
| Alaska | \$18,779,204 | \$18,779,204 | \$18,779,204 | 0.00% | 0.00% |
| Arizona | \$28,839,546 | \$27,047,459 | \$27,047,459 | -6.21% | -6.21% |
| Arkansas | \$30,440,418 | \$29,230,891 | \$29,230,891 | -3.97% | -3.97% |
| California | \$204,360,846 | \$187,555,423 | \$187,555,423 | -8.22% | -8.22% |
| Colorado | \$53,600,478 | \$53,392,575 | \$53,392,575 | -0.39% | -0.39% |
| Connecticut | \$75,018,998 | \$87,980,686 | \$87,980,686 | 17.28% | 17.28% |
| Delaware | \$12,908,288 | \$13,332,203 | \$13,332,203 | 3.28% | 3.28% |
| District of Columbia | \$11,148,804 | \$11,148,804 | \$11,148,804 | 0.00% | 0.00% |
| Florida | \$94,358,253 | \$88,494,838 | \$88,494,838 | -6.21% | -6.21% |

¹⁴ The six states with yellow-filled cells have percentage differences from single-year FY 2016 hypothetical gross allocations—in the annual category or the triennial category—that fall in the top three most extreme of either category.

¹⁵ We present **FY 2019 Gross Alloc. with Triennially Updated Avg. 1984-Formula Factors (FY 2015 - FY 2017)** even though it shows the same results as **FY 2019 Gross Alloc. with Annually Updated Avg. 1984-Formula Factors (FY 2015 - FY 2017)**. This is to keep consistent with the presentation of Table A6 and Table A7, in which these results differ.

| Grantee | Hypothetical Gross Allocation for FY 2019- Using FY 2018 Top- Lines and FY 2019 1984-Formula Factors | FY 2019 Gross Alloc. with Annually Updated Average 1984-Formula Factors (FY 2015 - FY 2017) | FY 2019 Gross Alloc. with Triennially Updated Average 1984- Formula Factors (FY 2015 - FY 2017)¹⁵ | FY 2019 Annually Updated Avg. over Actual--Perc. Difference in Allocation | FY 2019 Triennially Updated Avg. over Actual--Perc. Difference in Allocation |
|----------------|---|--|---|--|---|
| Georgia | \$74,604,669 | \$69,968,740 | \$69,968,740 | -6.21% | -6.21% |
| Hawaii | \$4,992,900 | \$6,213,185 | \$6,213,185 | 24.44% | 24.44% |
| Idaho | \$21,465,212 | \$21,465,212 | \$21,465,212 | 0.00% | 0.00% |
| Illinois | \$171,585,823 | \$171,007,959 | \$171,007,959 | -0.34% | -0.34% |
| Indiana | \$77,427,600 | \$77,427,600 | \$77,427,600 | 0.00% | 0.00% |
| Iowa | \$54,873,978 | \$54,873,978 | \$54,873,978 | 0.00% | 0.00% |
| Kansas | \$36,383,337 | \$34,565,321 | \$34,565,321 | -5.00% | -5.00% |
| Kentucky | \$54,531,446 | \$50,367,348 | \$50,367,348 | -7.64% | -7.64% |
| Louisiana | \$50,711,647 | \$44,186,241 | \$44,186,241 | -12.87% | -12.87% |
| Maine | \$40,026,304 | \$41,197,232 | \$41,197,232 | 2.93% | 2.93% |
| Maryland | \$78,684,334 | \$77,248,071 | \$77,248,071 | -1.83% | -1.83% |
| Massachusetts | \$135,995,693 | \$158,788,953 | \$158,788,953 | 16.76% | 16.76% |
| Michigan | \$165,759,089 | \$168,296,057 | \$168,296,057 | 1.53% | 1.53% |
| Minnesota | \$116,969,082 | \$116,969,082 | \$116,969,082 | 0.00% | 0.00% |
| Mississippi | \$32,155,506 | \$30,806,484 | \$30,806,484 | -4.20% | -4.20% |
| Missouri | \$79,927,979 | \$79,093,615 | \$79,093,615 | -1.04% | -1.04% |
| Montana | \$25,177,329 | \$25,177,329 | \$25,177,329 | 0.00% | 0.00% |
| Nebraska | \$31,531,258 | \$31,531,258 | \$31,531,258 | 0.00% | 0.00% |
| Nevada | \$13,545,076 | \$12,703,387 | \$12,703,387 | -6.21% | -6.21% |
| New Hampshire | \$27,180,530 | \$29,053,398 | \$29,053,398 | 6.89% | 6.89% |
| New Jersey | \$123,584,658 | \$133,918,266 | \$133,918,266 | 8.36% | 8.36% |
| New Mexico | \$20,928,283 | \$19,820,675 | \$19,820,675 | -5.29% | -5.29% |
| New York | \$374,620,636 | \$386,228,616 | \$386,228,616 | 3.10% | 3.10% |
| North Carolina | \$98,183,041 | \$92,974,004 | \$92,974,004 | -5.31% | -5.31% |
| North Dakota | \$27,350,196 | \$27,350,196 | \$27,350,196 | 0.00% | 0.00% |
| Ohio | \$154,399,281 | \$152,201,181 | \$152,201,181 | -1.42% | -1.42% |

| Grantee | Hypothetical Gross Allocation for FY 2019- Using FY 2018 Top- Lines and FY 2019 1984-Formula Factors | FY 2019 Gross Alloc. with Annually Updated Average 1984-Formula Factors (FY 2015 - FY 2017) | FY 2019 Gross Alloc. with Triennially Updated Average 1984- Formula Factors (FY 2015 - FY 2017)¹⁵ | FY 2019 Annually Updated Avg. over Actual--Perc. Difference in Allocation | FY 2019 Triennially Updated Avg. over Actual--Perc. Difference in Allocation |
|----------------|---|--|---|--|---|
| Oklahoma | \$43,246,194 | \$39,731,668 | \$39,731,668 | -8.13% | -8.13% |
| Oregon | \$36,706,831 | \$36,706,831 | \$36,706,831 | 0.00% | 0.00% |
| Pennsylvania | \$205,756,006 | \$221,831,368 | \$221,831,368 | 7.81% | 7.81% |
| Rhode Island | \$23,637,361 | \$28,241,747 | \$28,241,747 | 19.48% | 19.48% |
| South Carolina | \$45,328,757 | \$41,270,433 | \$41,270,433 | -8.95% | -8.95% |
| South Dakota | \$22,213,149 | \$22,213,149 | \$22,213,149 | 0.00% | 0.00% |
| Tennessee | \$65,414,246 | \$61,018,877 | \$61,018,877 | -6.72% | -6.72% |
| Texas | \$156,980,651 | \$147,225,886 | \$147,225,886 | -6.21% | -6.21% |
| Utah | \$25,572,386 | \$25,572,386 | \$25,572,386 | 0.00% | 0.00% |
| Vermont | \$20,372,775 | \$20,372,775 | \$20,372,775 | 0.00% | 0.00% |
| Virginia | \$90,969,165 | \$89,352,695 | \$89,352,695 | -1.78% | -1.78% |
| Washington | \$60,377,680 | \$60,377,680 | \$60,377,680 | 0.00% | 0.00% |
| West Virginia | \$30,982,475 | \$30,982,475 | \$30,982,475 | 0.00% | 0.00% |
| Wisconsin | \$105,288,970 | \$105,288,970 | \$105,288,970 | 0.00% | 0.00% |
| Wyoming | \$10,238,621 | \$10,238,621 | \$10,238,621 | 0.00% | 0.00% |
| <i>Total</i> | <i>\$3,619,129,420</i> | <i>\$3,619,129,420</i> | <i>\$3,619,129,420</i> | <i>0.00%</i> | <i>0.00%</i> |

APPENDIX 2- IMPACT OF YEARLONG LAGS IN SEDS DATA ON STATE ALLOCATIONS FOR FY 2016-FY 2020

Table A9 through Table A13 of this appendix show the impact of the yearlong lag in SEDS data for each of the fiscal years covered by this report. The equivalent table for all these years in aggregate appears in Table 23 of the report's body. These tables show, for the year of interest, actual state gross allocations and state gross allocations recalculated using the 1984-Formula factors from the previous year. They ignore the additional lag in Wood data, due to that fuel's low share of total low-income home energy expenditures.

Table A9 FY 2016 Actual State Gross Allocations Compared with Hypothetical FY 2016 Allocations That Use 1984-Formula Factors from FY 2015¹⁶

| Grantee | FY 2016 Gross Alloc. with 1984-Formula Factors from FY 2016 | FY 2016 Gross Alloc. with 1984-Formula Factors from FY 2015 | Allocations with Previous Year Factors Over Actual Allocations |
|----------------------|---|---|---|
| Alabama | \$43,551,071 | \$44,068,551 | 1.19% |
| Alaska | \$17,496,313 | \$17,496,313 | 0.00% |
| Arizona | \$21,061,817 | \$21,312,077 | 1.19% |
| Arkansas | \$27,857,843 | \$26,759,670 | -3.94% |
| California | \$177,168,033 | \$173,962,508 | -1.81% |
| Colorado | \$49,002,284 | \$48,461,904 | -1.10% |
| Connecticut | \$80,689,886 | \$85,707,782 | 6.22% |
| Delaware | \$12,573,831 | \$12,539,741 | -0.27% |
| District of Columbia | \$10,387,179 | \$10,387,179 | 0.00% |
| Florida | \$68,910,798 | \$69,729,606 | 1.19% |
| Georgia | \$54,484,552 | \$55,131,946 | 1.19% |
| Hawaii | \$5,486,895 | \$5,552,095 | 1.19% |
| Idaho | \$19,998,828 | \$19,998,828 | 0.00% |
| Illinois | \$166,270,241 | \$166,270,241 | 0.00% |
| Indiana | \$75,282,494 | \$75,282,494 | 0.00% |
| Iowa | \$53,353,713 | \$53,353,713 | 0.00% |
| Kansas | \$31,920,554 | \$30,693,811 | -3.84% |
| Kentucky | \$46,712,638 | \$44,532,705 | -4.67% |
| Louisiana | \$42,233,740 | \$38,366,137 | -9.16% |
| Maine | \$38,917,389 | \$38,917,389 | 0.00% |
| Maryland | \$72,254,634 | \$68,810,896 | -4.77% |
| Massachusetts | \$148,767,750 | \$146,215,711 | -1.72% |
| Michigan | \$157,859,020 | \$160,361,250 | 1.59% |
| Minnesota | \$113,728,493 | \$113,728,493 | 0.00% |

¹⁶ The six states with yellow-filled cells have percentage differences from FY 2016 actual that fall in the top three most extreme (positive and negative).

| Grantee | FY 2016 Gross Alloc. with 1984-Formula Factors from FY 2016 | FY 2016 Gross Alloc. with 1984-Formula Factors from FY 2015 | Allocations with Previous Year Factors Over Actual Allocations |
|----------------|---|---|---|
| Mississippi | \$29,051,131 | \$26,976,600 | -7.14% |
| Missouri | \$73,294,773 | \$73,155,115 | -0.19% |
| Montana | \$23,457,354 | \$23,457,354 | 0.00% |
| Nebraska | \$29,377,218 | \$29,377,218 | 0.00% |
| Nevada | \$9,892,109 | \$10,009,648 | 1.19% |
| New Hampshire | \$26,398,950 | \$25,538,637 | -3.26% |
| New Jersey | \$127,094,199 | \$125,550,190 | -1.21% |
| New Mexico | \$18,766,313 | \$17,830,401 | -4.99% |
| New York | \$364,241,895 | \$378,058,440 | 3.79% |
| North Carolina | \$86,702,402 | \$86,453,295 | -0.29% |
| North Dakota | \$25,481,783 | \$25,481,783 | 0.00% |
| Ohio | \$147,090,880 | \$147,090,880 | 0.00% |
| Oklahoma | \$36,844,135 | \$36,317,283 | -1.43% |
| Oregon | \$35,689,880 | \$35,689,880 | 0.00% |
| Pennsylvania | \$203,405,185 | \$204,539,168 | 0.56% |
| Rhode Island | \$26,001,646 | \$27,342,840 | 5.16% |
| South Carolina | \$34,588,425 | \$34,999,411 | 1.19% |
| South Dakota | \$20,695,670 | \$20,695,670 | 0.00% |
| Tennessee | \$56,100,554 | \$55,123,811 | -1.74% |
| Texas | \$114,644,576 | \$116,006,800 | 1.19% |
| Utah | \$23,825,423 | \$23,825,423 | 0.00% |
| Vermont | \$18,981,020 | \$18,981,020 | 0.00% |
| Virginia | \$83,926,259 | \$81,379,869 | -3.03% |
| Washington | \$58,704,936 | \$58,704,936 | 0.00% |
| West Virginia | \$28,865,924 | \$28,865,924 | 0.00% |
| Wisconsin | \$102,371,974 | \$102,371,974 | 0.00% |
| Wyoming | \$9,539,175 | \$9,539,175 | 0.00% |
| <i>Total</i> | <i>\$3,351,003,785</i> | <i>\$3,351,003,785</i> | <i>0.00%</i> |

Table A10 FY 2017 Actual State Gross Allocations Compared with Hypothetical FY 2017 Allocations That Use 1984-Formula Factors from FY 2016¹⁷

| Grantee | FY 2017 Gross Alloc. with 1984-Formula Factors from FY 2017 | FY 2017 Gross Alloc. with 1984-Formula Factors from FY 2016 | Allocations with Previous Year Factors Over Actual Allocations |
|---------|---|---|---|
| Alabama | \$44,941,278 | \$43,902,726 | -2.31% |

¹⁷ The six states with yellow-filled cells have percentage differences from FY 2017 actual that fall in the top three most extreme (positive and negative).

| Grantee | FY 2017 Gross Alloc. with 1984-Formula Factors from FY 2017 | FY 2017 Gross Alloc. with 1984-Formula Factors from FY 2016 | Allocations with Previous Year Factors Over Actual Allocations |
|----------------------|--|--|---|
| Alaska | \$17,487,781 | \$17,487,781 | 0.00% |
| Arizona | \$21,734,137 | \$21,231,881 | -2.31% |
| Arkansas | \$26,818,870 | \$27,984,996 | 4.35% |
| California | \$171,344,037 | \$178,062,004 | 3.92% |
| Colorado | \$51,040,984 | \$49,313,984 | -3.38% |
| Connecticut | \$78,713,173 | \$81,096,509 | 3.03% |
| Delaware | \$12,035,851 | \$12,627,802 | 4.92% |
| District of Columbia | \$10,382,114 | \$10,382,114 | 0.00% |
| Florida | \$71,110,522 | \$69,467,222 | -2.31% |
| Georgia | \$56,223,772 | \$54,924,491 | -2.31% |
| Hawaii | \$5,143,448 | \$5,531,200 | 7.54% |
| Idaho | \$19,989,075 | \$19,989,075 | 0.00% |
| Illinois | \$167,395,704 | \$167,395,704 | 0.00% |
| Indiana | \$75,792,072 | \$75,792,072 | 0.00% |
| Iowa | \$53,714,858 | \$53,714,858 | 0.00% |
| Kansas | \$33,605,917 | \$32,086,408 | -4.52% |
| Kentucky | \$48,634,012 | \$46,977,821 | -3.41% |
| Louisiana | \$42,462,057 | \$42,404,103 | -0.14% |
| Maine | \$39,180,816 | \$39,180,816 | 0.00% |
| Maryland | \$74,051,242 | \$72,565,980 | -2.01% |
| Massachusetts | \$147,241,978 | \$149,581,131 | 1.59% |
| Michigan | \$158,927,549 | \$158,927,549 | 0.00% |
| Minnesota | \$114,498,307 | \$114,498,307 | 0.00% |
| Mississippi | \$29,746,159 | \$29,193,998 | -1.86% |
| Missouri | \$73,618,155 | \$73,744,327 | 0.17% |
| Montana | \$23,445,914 | \$23,445,914 | 0.00% |
| Nebraska | \$29,362,891 | \$29,362,891 | 0.00% |
| Nevada | \$10,207,878 | \$9,971,983 | -2.31% |
| New Hampshire | \$28,546,488 | \$26,552,906 | -6.98% |
| New Jersey | \$120,141,895 | \$127,849,297 | 6.42% |
| New Mexico | \$18,600,409 | \$18,867,204 | 1.43% |
| New York | \$366,707,404 | \$366,707,402 | 0.00% |
| North Carolina | \$85,848,491 | \$87,069,838 | 1.42% |
| North Dakota | \$25,469,355 | \$25,469,355 | 0.00% |
| Ohio | \$148,086,520 | \$148,086,520 | 0.00% |
| Oklahoma | \$37,498,248 | \$36,997,311 | -1.34% |
| Oregon | \$35,931,461 | \$35,931,461 | 0.00% |
| Pennsylvania | \$209,106,656 | \$204,729,527 | -2.09% |

| Grantee | FY 2017 Gross Alloc. with 1984-Formula Factors from FY 2017 | FY 2017 Gross Alloc. with 1984-Formula Factors from FY 2016 | Allocations with Previous Year Factors Over Actual Allocations |
|----------------|---|---|---|
| Rhode Island | \$25,333,324 | \$26,135,533 | 3.17% |
| South Carolina | \$35,692,535 | \$34,867,712 | -2.31% |
| South Dakota | \$20,685,578 | \$20,685,578 | 0.00% |
| Tennessee | \$58,665,764 | \$56,369,179 | -3.91% |
| Texas | \$118,304,182 | \$115,570,279 | -2.31% |
| Utah | \$23,813,803 | \$23,813,803 | 0.00% |
| Vermont | \$18,971,763 | \$18,971,763 | 0.00% |
| Virginia | \$83,571,402 | \$84,305,514 | 0.88% |
| Washington | \$59,102,303 | \$59,102,303 | 0.00% |
| West Virginia | \$28,851,846 | \$28,851,846 | 0.00% |
| Wisconsin | \$103,064,918 | \$103,064,918 | 0.00% |
| Wyoming | \$9,534,524 | \$9,534,524 | 0.00% |
| Total | \$3,370,379,420 | \$3,370,379,420 | 0.00% |

Table A11 FY 2018 Actual State Gross Allocations Compared with Hypothetical FY 2018 Allocations That Use 1984-Formula Factors from FY 2017¹⁸

| Grantee | FY 2018 Gross Alloc. with 1984-Formula Factors from FY 2018 | FY 2018 Gross Alloc. with 1984-Formula Factors from FY 2017 | Allocations with Previous Year Factors Over Actual Allocations |
|----------------------|---|---|---|
| Alabama | \$51,553,895 | \$48,389,231 | -6.14% |
| Alaska | \$18,779,204 | \$18,779,204 | 0.00% |
| Arizona | \$27,971,948 | \$27,753,078 | -0.78% |
| Arkansas | \$31,134,093 | \$28,801,177 | -7.49% |
| California | \$191,854,615 | \$183,972,390 | -4.11% |
| Colorado | \$53,174,674 | \$54,809,770 | 3.07% |
| Connecticut | \$80,738,355 | \$84,516,284 | 4.68% |
| Delaware | \$13,653,457 | \$12,926,859 | -5.32% |
| District of Columbia | \$11,148,804 | \$11,148,804 | 0.00% |
| Florida | \$91,519,613 | \$90,803,508 | -0.78% |
| Georgia | \$72,360,288 | \$71,794,098 | -0.78% |
| Hawaii | \$5,004,477 | \$5,525,145 | 10.40% |
| Idaho | \$21,465,212 | \$21,465,212 | 0.00% |
| Illinois | \$171,007,959 | \$174,353,559 | 1.96% |
| Indiana | \$77,427,600 | \$77,427,600 | 0.00% |
| Iowa | \$54,873,978 | \$54,873,978 | 0.00% |

¹⁸ The six states with yellow-filled cells have percentage differences from FY 2018 actual that fall in the top three most extreme (positive and negative).

| Grantee | FY 2018 Gross Alloc. with 1984-Formula Factors from FY 2018 | FY 2018 Gross Alloc. with 1984-Formula Factors from FY 2017 | Allocations with Previous Year Factors Over Actual Allocations |
|-----------------------|--|--|---|
| Kansas | \$36,216,862 | \$36,086,970 | -0.36% |
| Kentucky | \$53,571,684 | \$52,213,310 | -2.54% |
| Louisiana | \$48,120,020 | \$45,614,462 | -5.21% |
| Maine | \$40,264,690 | \$41,255,358 | 2.46% |
| Maryland | \$81,679,806 | \$79,542,478 | -2.62% |
| Massachusetts | \$147,723,157 | \$158,073,780 | 7.01% |
| Michigan | \$162,357,068 | \$163,092,952 | 0.45% |
| Minnesota | \$116,969,082 | \$116,969,082 | 0.00% |
| Mississippi | \$32,594,076 | \$31,944,015 | -1.99% |
| Missouri | \$81,052,432 | \$79,054,012 | -2.47% |
| Montana | \$25,177,329 | \$25,177,329 | 0.00% |
| Nebraska | \$31,531,258 | \$31,531,258 | 0.00% |
| Nevada | \$13,137,592 | \$13,034,795 | -0.78% |
| New Hampshire | \$27,994,431 | \$30,648,171 | 9.48% |
| New Jersey | \$127,410,239 | \$129,005,288 | 1.25% |
| New Mexico | \$19,777,911 | \$19,969,573 | 0.97% |
| New York | \$374,620,636 | \$376,365,461 | 0.47% |
| North Carolina | \$97,446,837 | \$92,211,647 | -5.37% |
| North Dakota | \$27,350,196 | \$27,350,196 | 0.00% |
| Ohio | \$154,050,894 | \$153,755,862 | -0.19% |
| Oklahoma | \$41,885,993 | \$40,280,918 | -3.83% |
| Oregon | \$36,706,831 | \$36,706,831 | 0.00% |
| Pennsylvania | \$214,780,545 | \$224,529,741 | 4.54% |
| Rhode Island | \$26,903,933 | \$27,199,669 | 1.10% |
| South Carolina | \$43,107,127 | \$41,301,153 | -4.19% |
| South Dakota | \$22,213,149 | \$22,213,149 | 0.00% |
| Tennessee | \$63,972,029 | \$63,006,277 | -1.51% |
| Texas | \$152,258,101 | \$151,066,741 | -0.78% |
| Utah | \$25,572,386 | \$25,572,386 | 0.00% |
| Vermont | \$20,372,775 | \$20,372,775 | 0.00% |
| Virginia | \$91,754,433 | \$89,756,138 | -2.18% |
| Washington | \$60,377,680 | \$60,377,680 | 0.00% |
| West Virginia | \$30,982,475 | \$30,982,475 | 0.00% |
| Wisconsin | \$105,288,970 | \$105,288,970 | 0.00% |
| Wyoming | \$10,238,621 | \$10,238,621 | 0.00% |
| Total | \$3,619,129,420 | \$3,619,129,420 | 0.00% |

Table A12 FY 2019 Actual State Gross Allocations Compared with Hypothetical FY 2019 Allocations That Use 1984-Formula Factors from FY 2018¹⁹

| Grantee | FY 2019 Gross Alloc. with 1984-Formula Factors from FY 2019 | FY 2019 Gross Alloc. with 1984-Formula Factors from FY 2018 | Allocations with Previous Year Factors Over Actual Allocations |
|----------------------|---|---|---|
| Alabama | \$54,742,789 | \$52,268,128 | -4.52% |
| Alaska | \$19,037,489 | \$19,037,489 | 0.00% |
| Arizona | \$29,877,652 | \$29,219,972 | -2.20% |
| Arkansas | \$30,859,390 | \$31,563,145 | 2.28% |
| California | \$207,170,036 | \$194,489,021 | -6.12% |
| Colorado | \$54,337,146 | \$53,905,324 | -0.79% |
| Connecticut | \$76,052,014 | \$81,844,377 | 7.62% |
| Delaware | \$13,085,948 | \$13,841,766 | 5.78% |
| District of Columbia | \$11,302,141 | \$11,302,141 | 0.00% |
| Florida | \$97,754,763 | \$95,602,940 | -2.20% |
| Georgia | \$77,290,129 | \$75,588,784 | -2.20% |
| Hawaii | \$5,061,609 | \$5,073,395 | 0.23% |
| Idaho | \$21,760,439 | \$21,760,439 | 0.00% |
| Illinois | \$173,935,512 | \$171,730,410 | -1.27% |
| Indiana | \$77,754,705 | \$77,754,705 | 0.00% |
| Iowa | \$55,105,802 | \$55,105,802 | 0.00% |
| Kansas | \$36,882,879 | \$36,714,415 | -0.46% |
| Kentucky | \$55,278,696 | \$54,305,951 | -1.76% |
| Louisiana | \$51,413,283 | \$48,785,403 | -5.11% |
| Maine | \$40,195,401 | \$40,816,118 | 1.54% |
| Maryland | \$79,768,846 | \$82,807,333 | 3.81% |
| Massachusetts | \$137,863,267 | \$149,756,467 | 8.63% |
| Michigan | \$168,030,237 | \$163,042,972 | -2.97% |
| Minnesota | \$117,463,237 | \$117,463,237 | 0.00% |
| Mississippi | \$32,597,328 | \$33,042,409 | 1.37% |
| Missouri | \$81,027,503 | \$82,167,846 | 1.41% |
| Montana | \$25,523,613 | \$25,523,613 | 0.00% |
| Nebraska | \$31,964,932 | \$31,964,932 | 0.00% |
| Nevada | \$14,032,644 | \$13,723,751 | -2.20% |
| New Hampshire | \$27,554,364 | \$28,379,768 | 3.00% |
| New Jersey | \$125,280,731 | \$129,160,376 | 3.10% |
| New Mexico | \$21,215,144 | \$20,048,736 | -5.50% |
| New York | \$376,203,282 | \$376,203,283 | 0.00% |

¹⁹ The six states with yellow-filled cells have percentage differences from FY 2019 actual that fall in the top three most extreme (positive and negative).

| Grantee | FY 2019 Gross Alloc. with 1984-Formula Factors from FY 2019 | FY 2019 Gross Alloc. with 1984-Formula Factors from FY 2018 | Allocations with Previous Year Factors Over Actual Allocations |
|----------------|---|---|---|
| North Carolina | \$99,538,164 | \$98,792,361 | -0.75% |
| North Dakota | \$27,726,365 | \$27,726,365 | 0.00% |
| Ohio | \$156,514,761 | \$156,161,450 | -0.23% |
| Oklahoma | \$43,843,842 | \$42,464,754 | -3.15% |
| Oregon | \$36,861,905 | \$36,861,905 | 0.00% |
| Pennsylvania | \$208,575,307 | \$217,727,384 | 4.39% |
| Rhode Island | \$23,962,464 | \$27,272,624 | 13.81% |
| South Carolina | \$45,957,677 | \$43,704,940 | -4.90% |
| South Dakota | \$22,518,664 | \$22,518,664 | 0.00% |
| Tennessee | \$66,314,992 | \$64,852,981 | -2.20% |
| Texas | \$162,631,309 | \$159,051,394 | -2.20% |
| Utah | \$25,924,103 | \$25,924,103 | 0.00% |
| Vermont | \$20,652,977 | \$20,652,977 | 0.00% |
| Virginia | \$92,221,297 | \$93,018,493 | 0.86% |
| Washington | \$60,690,820 | \$60,632,755 | -0.10% |
| West Virginia | \$31,408,601 | \$31,408,601 | 0.00% |
| Wisconsin | \$105,733,780 | \$105,733,780 | 0.00% |
| Wyoming | \$10,379,441 | \$10,379,441 | 0.00% |
| Total | \$3,668,879,420 | \$3,668,879,420 | 0.00% |

Table A13 FY 2020 Actual State Gross Allocations Compared with Hypothetical FY 2020 Allocations That Use 1984-Formula Factors from FY 2019²⁰

| Grantee | FY 2020 Gross Alloc. with 1984-Formula Factors from FY 2020 | FY 2020 Gross Alloc. with 1984-Formula Factors from FY 2019 | Allocations with Previous Year Factors Over Actual Allocations |
|----------------------|---|---|---|
| Alabama | \$78,062,645 | \$68,957,323 | -11.66% |
| Alaska | \$23,945,097 | \$23,945,097 | 0.00% |
| Arizona | \$47,228,480 | \$44,484,917 | -5.81% |
| Arkansas | \$41,315,029 | \$38,818,605 | -6.04% |
| California | \$255,821,300 | \$260,537,804 | 1.84% |
| Colorado | \$77,078,419 | \$68,334,676 | -11.34% |
| Connecticut | \$87,101,755 | \$95,679,476 | 9.85% |
| Delaware | \$16,627,267 | \$16,460,977 | -1.00% |
| District of Columbia | \$14,215,681 | \$14,215,681 | 0.00% |
| Florida | \$154,523,820 | \$145,547,331 | -5.81% |

²⁰ The six states with yellow-filled cells have percentage differences from FY 2020 actual that fall in the top three most extreme (positive and negative).

| Grantee | FY 2020 Gross Alloc. with 1984-Formula Factors from FY 2020 | FY 2020 Gross Alloc. with 1984-Formula Factors from FY 2019 | Allocations with Previous Year Factors Over Actual Allocations |
|-----------------------|--|--|---|
| Georgia | \$122,174,776 | \$115,077,484 | -5.81% |
| Hawaii | \$6,133,960 | \$6,366,863 | 3.80% |
| Idaho | \$27,369,987 | \$27,369,987 | 0.00% |
| Illinois | \$215,741,187 | \$218,586,803 | 1.32% |
| Indiana | \$95,018,252 | \$92,600,005 | -2.55% |
| Iowa | \$59,519,732 | \$59,519,732 | 0.00% |
| Kansas | \$47,563,750 | \$46,373,208 | -2.50% |
| Kentucky | \$70,324,813 | \$69,475,579 | -1.21% |
| Louisiana | \$69,751,592 | \$64,740,851 | -7.18% |
| Maine | \$43,415,020 | \$48,279,664 | 11.20% |
| Maryland | \$99,419,517 | \$100,370,779 | 0.96% |
| Massachusetts | \$159,588,177 | \$173,350,125 | 8.62% |
| Michigan | \$199,012,351 | \$211,188,360 | 6.12% |
| Minnesota | \$126,871,947 | \$126,871,947 | 0.00% |
| Mississippi | \$45,908,645 | \$40,990,953 | -10.71% |
| Missouri | \$103,497,842 | \$101,919,166 | -1.53% |
| Montana | \$32,103,255 | \$32,103,255 | 0.00% |
| Nebraska | \$40,205,060 | \$40,205,060 | 0.00% |
| Nevada | \$22,181,813 | \$20,893,242 | -5.81% |
| New Hampshire | \$34,657,508 | \$34,657,508 | 0.00% |
| New Jersey | \$150,959,729 | \$157,509,354 | 4.34% |
| New Mexico | \$28,564,886 | \$26,665,123 | -6.65% |
| New York | \$406,336,858 | \$444,493,715 | 9.39% |
| North Carolina | \$130,949,602 | \$125,280,021 | -4.33% |
| North Dakota | \$34,873,848 | \$34,873,848 | 0.00% |
| Ohio | \$194,302,594 | \$196,714,749 | 1.24% |
| Oklahoma | \$62,488,679 | \$55,196,455 | -11.67% |
| Oregon | \$48,615,204 | \$43,768,035 | -9.97% |
| Pennsylvania | \$237,892,074 | \$262,149,780 | 10.20% |
| Rhode Island | \$30,139,664 | \$30,139,664 | 0.00% |
| South Carolina | \$67,296,318 | \$57,903,283 | -13.96% |
| South Dakota | \$28,323,671 | \$28,323,671 | 0.00% |
| Tennessee | \$90,485,162 | \$83,426,352 | -7.80% |
| Texas | \$257,076,082 | \$242,142,197 | -5.81% |
| Utah | \$32,606,988 | \$32,606,988 | 0.00% |
| Vermont | \$25,977,036 | \$25,977,036 | 0.00% |
| Virginia | \$118,750,243 | \$116,008,092 | -2.31% |
| Washington | \$85,348,700 | \$76,265,194 | -10.64% |

| Grantee | FY 2020 Gross Alloc. with 1984-Formula Factors from FY 2020 | FY 2020 Gross Alloc. with 1984-Formula Factors from FY 2019 | Allocations with Previous Year Factors Over Actual Allocations |
|----------------|--|--|---|
| West Virginia | \$39,505,314 | \$39,505,314 | 0.00% |
| Wisconsin | \$114,202,970 | \$114,202,970 | 0.00% |
| Wyoming | \$13,055,121 | \$13,055,121 | 0.00% |
| <i>Total</i> | <i>\$4,614,129,420</i> | <i>\$4,614,129,420</i> | <i>0.00%</i> |

APPENDIX 3-ANALYSES OF THE FACTORS THAT DROVE YEAR-OVER-YEAR CHANGES IN 1984 FORMULA PERCENTAGES OF STATES THAT EXPERIENCED LARGE CHANGES IN YEAR-OVER-YEAR ALLOCATIONS FOR FY 2016–FY 2020

The body of the report identifies 10 trios of states—five trios of gainers and five trios of decliners across all five years—whose gross allocations changed the most from year to year. It demonstrates that, for all 30 states, the gains and declines were driven by changes in their 1984 Formula percentages. This appendix shows the most significant²¹ factors that drove those changes.

Data Drivers for the States with the Top Three Year-over-Year 1984-Formula Percentage Increases

Table A14 lists the states that had the top three year-over-year percentage increases in gross allocation. It also compares the year-over-year percentage changes in 1984-Formula percentage for these states.

Table A14 Listing of Year-over-Year Percentage Changes in 1984-Formula Percentage for States with Top Three Percentage Increases in Gross Allocation

| State—Fiscal year | Gross Allocation-- Current Fiscal Year | Gross Allocation-- Previous Fiscal Year | Gross Allocation--% Increase | 1984-Formula Percentage-- Previous Fiscal Year | 1984-Formula Percentage-- Current Fiscal Year | 1984-Formula Percentage--% Difference |
|----------------------|--|---|---------------------------------|---|--|---|
| Louisiana—2016 | \$45,551,726 | \$41,389,360 | 10.06% | 1.2360830% | 1.3940802% | 12.78% |
| Mississippi--2016 | \$31,349,555 | \$29,116,708 | 7.67% | 0.8247626% | 0.9096227% | 10.29% |
| New Mexico--2016 | \$20,256,431 | \$19,248,947 | 5.23% | 0.5327092% | 0.5710729% | 7.20% |
| New Hampshire--2017 | \$30,648,171 | \$28,516,480 | 7.48% | 0.7876387% | 0.8616674% | 9.40% |
| Kansas—2017 | \$36,086,970 | \$34,451,561 | 4.75% | 0.9824229% | 1.0445471% | 6.32% |
| Tennessee—2017 | \$63,006,277 | \$60,534,481 | 4.08% | 1.7705236% | 1.8644393% | 5.30% |
| Arkansas—2018 | \$31,134,093 | \$28,801,177 | 8.10% | 0.8437912% | 0.9311380% | 10.35% |
| Alabama—2018 | \$51,553,895 | \$48,389,231 | 6.54% | 1.5089749% | 1.6275099% | 7.86% |
| North Carolina--2018 | \$97,446,837 | \$92,211,647 | 5.68% | 2.7786101% | 2.9739668% | 7.03% |
| California—2019 | \$204,360,846 | \$191,854,615 | 6.52% | 5.5224211% | 5.9908550% | 8.48% |
| New Mexico--2019 | \$20,928,283 | \$19,777,911 | 5.82% | 0.5522556% | 0.5952345% | 7.78% |

²¹ A “significant” factor in this context is one whose percentage-point deviation from all states in year-over-year change times its respective fuel’s share of that state’s LIHEE equaled or (1) exceeded 0.5 percent, for a factor that increased the state’s 1984-Formula percentage; or (2) fell below 0.5 percent, for a factor that decreased the state’s 1984-Formula percentage.

| State—Fiscal year | Gross Allocation-- Current Fiscal Year | Gross Allocation-- Previous Fiscal Year | Gross Allocation--% Increase | 1984-Formula Percentage-- Previous Fiscal Year | 1984-Formula Percentage-- Current Fiscal Year | 1984-Formula Percentage--% Difference |
|-------------------|---|--|---------------------------------|--|---|---|
| Louisiana—2019 | \$50,711,647 | \$48,120,020 | 5.39% | 1.4901851% | 1.5873445% | 6.52% |
| Oklahoma—2020 | \$48,929,178 | \$43,246,194 | 13.14% | 1.3382209% | 1.5540082% | 16.12% |
| Colorado—2020 | \$60,516,109 | \$53,600,478 | 12.90% | 1.4380779% | 1.6832146% | 17.05% |
| Mississippi—2020 | \$35,987,154 | \$32,155,506 | 11.92% | 0.9383285% | 1.0839592% | 15.52% |

The most significant factors that drove those increases consist of the following:

1. The following for the three greatest gainers from FY 2015 to FY 2016 (i.e., Louisiana, Mississippi, and New Mexico):
 - a. For Louisiana, the following relative increases in estimated, normal year, low-income, home-energy electricity expenditures²² for heating and cooling:
 - i. An increase in electricity expenditures for heating that was 12.3 percentage points greater than that of all states, as driven by the following:
 - 1) An increase in the ratio of low-income electricity heaters to all-income electricity heaters that was 3.0 percentage points greater than that of all states;
 - 2) An increase in electricity price that was 10.5 percentage points greater than that of all states; and
 - ii. An increase in electricity expenditures for cooling that was 16.6 percentage points greater than that of all states, as driven by the following:
 - 1) An increase in the ratio of low-income households to all-income households that was 2.3 percentage points greater than that of all states; and
 - 2) The relative increase in electricity price;

²² Unless otherwise stated, all subsequent references to “expenditures” of a given fuel type refer to estimated, normal year, low-income, home-energy expenditures of that fuel type.

- b. For Mississippi, the following relative increases in expenditures for the following two heating fuels and electricity for cooling:
 - i. An increase in natural gas expenditures that was 7.0 percentage points greater than that of all states²³, as driven by the following:
 - 1) An increase in all-purpose, all-income consumption of natural gas that was 9.7 percentage points greater than that of all states;
 - ii. An increase in electricity expenditures for heating that was 7.9 percentage points greater than that of all states, as driven by the following:
 - 1) An increase in the ratio of low-income electricity heaters to all-income electricity heaters that was 4.5 percentage points greater than that of all states; and
 - 2) An increase in electricity price that was 4.2 percentage points greater than that of all states; and
 - iii. An increase in electricity expenditures for cooling that was 9.5 percentage points greater than that of all states, as driven by the following:
 - 1) An increase in the ratio of low-income households to all-income households that was 3.5 percentage points greater than that of all states; and
 - 2) The relative increase in electricity price;
- c. For New Mexico, the following relative increases in expenditures of the following three heating fuels:
 - i. An increase in natural gas expenditures that was 8.0 percentage points greater than that of all states, as driven by the following:

²³ Mississippi's overall natural gas expenditure increase was 6.85 percent, compared with all state's decrease of 0.13 percent. By convention we consider a decrease in a factor of all states to be an "increase" when the comparison state's change is positive.

- 1) An increase in ratio of low-income natural gas heaters to all-income natural gas heaters that was 4.9 percentage points greater than that of all states; and
 - 2) An increase in natural gas price that was 5.8 percentage points greater than that of all states;
 - ii. An increase in propane expenditures that was 4.0 percentage points greater than that of all states, as driven by an increase in the ratio of low-income natural gas heaters to all-income natural gas heaters that was 4.4 percentage points greater than that of all states; and
 - iii. An increase in wood expenditures that was 7.6 percentage points greater than that of all states, as driven by an increase in the ratio of low-income wood heaters to all-income wood heaters that was 9.4 percentage points greater than that of all states;
2. The following for the three greatest gainers from FY 2016 to FY 2017 (i.e., New Hampshire, Kansas, and Tennessee):
- a. For New Hampshire, the following relative increases in expenditures for the following three heating fuels:
 - i. An increase in natural gas expenditures that was 11.9 percentage points greater than that of all states, as driven by an increase in natural gas price that was 11.4 percentage points greater than that of all states;
 - ii. An increase in fuel oil expenditures that was 9.2 percentage points greater than that of all states, as driven by the following:
 - 1) An increase in all-purpose, all-income consumption of fuel oil that was 7.8 percentage points greater than that of all states; and
 - 2) An increase in the ratio of low-income fuel oil + kerosene heaters to all-income fuel oil + kerosene heaters that was 1.2 percentage points greater than that of all states; and
 - iii. An increase in propane expenditures that was 17.8 percentage points greater than that of all states, as driven by an increase in all-purpose, all-income consumption of propane that was 22.5 percentage points greater than that of all states.

- b. For Kansas, the following relative increases in expenditures for the following three heating fuels and electricity for cooling:
 - i. An increase in natural gas expenditures that was 5.1 percentage points greater than that of all states, as driven by an increase in the ratio of low-income natural gas heaters to all-income natural gas heaters that was 3.7 percentage points greater than that of all states;
 - ii. An increase in propane expenditures that was 16.6 percentage points greater than that of all states, as driven by the following:
 - 1) An increase in all-purpose, all-income consumption of propane that was 5.5 percentage points greater than that of all states; and
 - 2) An increase in propane price that was 3.9 percentage points greater than that of all states;
 - iii. An increase in electricity expenditures for heating that was 3.4 percentage points greater than that of all states, as driven by the combination of the following factors:
 - 1) An increase in the ratio of low-income electricity heaters to all-income electricity heaters that was 2.3 percentage points greater than that of all states; and
 - 2) An increase in electricity price that was 1.2 percentage points greater than that of all states; and
 - iv. An increase in electricity expenditures for cooling that was 4.5 percentage points greater than that of all states, as driven by an increase in the ratio of low-income households to all-income households that was 3.3 percentage points greater than that of all states;
- c. For Tennessee, the following relative increases in expenditures for the following three heating fuels and electricity for cooling:
 - i. An increase in natural gas expenditures that was 7.8 percentage points greater than that of all states, as driven by an increase in all-purpose, all-income consumption of natural gas that was 7.1 percentage points greater than that of all states;

- ii. An increase in propane expenditures that was 31.9 percentage points greater than that of all states, as driven by an increase in all-purpose, all-income consumption of propane that was 26.6 percentage points greater than that of all states;
- iii. An increase in electricity expenditures for heating that was 3.6 percentage points greater than that of all states, as driven by the following factors:
 - 1) An increase in all-purpose, all-income consumption of electricity that was 3.1 percentage points greater than that of all states; and
- iv. An increase in electricity expenditures for cooling that was 3.6 percentage points greater than that of all states, as driven by the following factors:
 - 1) The relative increase in all-purpose, all-income consumption of electricity.

3. The following for the three greatest gainers from FY 2017 to FY 2018 (i.e., Arkansas, Alabama, and North Carolina):

- a. For Arkansas, the following relative increases in expenditures for the following two heating fuels and electricity for cooling:
 - i. An increase in natural gas expenditures that was 19.1 percentage points greater than that of all states, as driven by an increase in natural gas price that was 18.6 percentage points greater than that of all states;
 - ii. An increase in electricity expenditures for heating that was 5.5 percentage points greater than that of all states, as driven by the following factors:
 - 1) An increase in the ratio of low-income electricity heaters to all-income electricity heaters that was 2.8 percentage points greater than that of all states; and
 - 2) An increase in electricity price that was 2.3 percentage points greater than that of all states; and
 - iii. An increase in electricity expenditures for cooling that was 2.9 percentage points greater than that of all states, as driven by the following factors:

- 1) An increase in the ratio of low-income households to all-income households that was 2.1 percentage points greater than that of all states; and
 - 2) The relative increase in electricity price;
 - b. For Alabama, the following relative increases in expenditures for the following two heating fuels:
 - i. A decrease in natural gas expenditures that was 2.7 percentage points smaller than that of all states, as driven by a decrease in natural gas price that was 2.7 percentage points smaller than that of all states; and
 - ii. A decrease in propane expenditures that was 18.0 percentage points smaller than that of all states, as driven by an increase in all-purpose, all-income propane consumption that was 18.1 percentage points greater than that of all states; and
 - c. For North Carolina, the following relative increases in expenditures for the following two heating fuels:
 - i. An increase in fuel oil expenditures that was 64.4 percentage points greater than that of all states, as driven by an increase in all-purpose, all-income fuel oil consumption that was 82.4 percentage points greater than that of all states;
 - ii. A decrease in propane expenditures that was 6.1 percentage points smaller than that of all states, as driven by the combination of the following factors:
 - 1) A decrease in all-purpose, all-income propane consumption that was 1.0 percentage points smaller than that of all states; and
 - 2) A decrease in propane price that was 3.1 percentage points smaller than that of all states.
4. The following for the three greatest gainers from FY 2018 to FY 2019 (i.e., California, New Mexico, and Louisiana):
 - a. For California, the following relative increases in expenditures for the following two heating fuels and electricity for cooling:

- i. An increase in natural gas expenditures that was 9.2 percentage points greater than that of all states, as driven by the following:
 - 1) An increase in all-purpose, all-income natural gas consumption that was 8.1 percentage points greater than that of all states; and
 - 2) An increase natural gas price that was 7.5 percentage points greater than that of all states;
 - ii. An increase in propane expenditures that was 19.7 percentage points greater than that of all states, as driven by the following:
 - 1) An increase in all-purpose, all-income propane consumption that was 13.2 percentage points greater than that of all states; and
 - 2) An increase propane price that was 12.2 percentage points greater than that of all states; and
 - iii. A decrease in electricity expenditures for cooling that was 2.8 percentage points smaller than that of all states, as driven by an increase in electricity price that was 3.2 percentage points greater than that of all states;
- b. For New Mexico, the following relative increases in expenditures for the following two heating fuels:
- i. A decrease in natural gas expenditures that was 1.7 percentage points smaller than that of all states, as driven by the following:
 - 1) A decrease in all-purpose, all-income natural gas consumption that was 4.4 percentage points smaller than that of all states; and
 - 2) A decrease in the ratio of low-income natural gas heaters to all-income natural gas heaters that was 1.4 percentage points smaller than that of all states;
 - ii. An increase in propane expenditures that was 33.3 percentage points greater than that of all states, as driven by the following:

- 1) An increase in all-purpose, all-income propane consumption that was 15.0 percentage points greater than that of all states; and
 - 2) An increase in the ratio of low-income propane heaters to all-income propane heaters that was 4.4 percentage points greater than that of all states; and
 - 3) An increase propane price that was 11.3 percentage points greater than that of all states; and
- c. For Louisiana, the following relative increases in expenditures for the following two heating fuels and electricity for cooling:
- i. A decrease in natural gas expenditures that was 3.9 percentage points smaller than that of all states, as driven by the following:
 - 1) An increase in the ratio of low-income natural gas heaters to all-income natural gas heaters that was 3.0 percentage points greater than that of all states; and
 - 2) An increase in natural gas price that was 7.2 percentage points greater than that of all states;
 - ii. An increase in propane expenditures that was 23.3 percentage points greater than that of all states, as driven by the combination of the following factors:
 - 1) A decrease in the ratio of low-income propane heaters to all-income propane heaters that was 1.4 percentage points smaller than that of all states; and
 - 2) An increase propane price that was 20.0 percentage points greater than that of all states; and
 - iii. A decrease in electricity expenditures for cooling that was 1.5 percentage points smaller than that of all states, as driven by an increase in the ratio of low-income households to all-income households that was 2.4 percentage points greater than that of all states.

5. The following for the three greatest gainers from FY 2019 to FY 2020²⁴ (i.e., Oklahoma, Colorado, and Mississippi):
- a. For Oklahoma, the following relative increases in expenditures for the following three heating fuels:
 - i. An increase in natural gas expenditures that was 15.1 percentage points greater than that of all states, as driven by the following factors:
 - 1) An increase in the share of natural gas used for heating that was 10.4 percentage points greater than that of all states; and
 - 2) A decrease in the ratio of average natural gas-for-heating consumption by low-income households to such consumption by all-income households that was 2.7 percentage points smaller than that of all states;
 - ii. An increase in propane expenditures that was 64.9 percentage points greater than that of all states, as driven by the following factors:
 - 1) An increase in all-purpose, all-income propane consumption that was 8.8 percentage points greater than that of all states;
 - 2) An increase in the share of propane used for heating that was 12.4 percentage points greater than that of all states; and
 - 3) An increase in the ratio of average propane-for-heating consumption by low-income households to such consumption by all-income households that was 18.1 percentage points greater than that of all states; and
 - iii. An increase in electricity expenditures for heating that was 20.3 percentage points greater than that of all states, as driven by the following factors:

²⁴ ACF updated data from one of its sources—the Residential Energy Consumption Survey (RECS)—for FY 2020. This led to additional changes in the underlying data of the factors for percentage heating/cooling, low-income/all-income average consumption, and certain fuel-specific factors.

- 1) An increase in the share of electricity used for heating that was 15.6 percentage points greater than that of all states;
- 2) A decrease in the ratio of average electricity-for-heating consumption by low-income households to such consumption by all-income households that was 1.4 percentage points smaller than that of all states; and
- 3) An increase in electricity price that was 1.4 percentage points greater than that of all states;

b. For Colorado, the following relative increases in expenditures for the following two heating fuels:

- i. An increase in propane expenditures that was 20.2 percentage points greater than that of all states, as driven by an increase in the ratio of average propane-for-heating consumption by low-income households to such consumption by all-income households was 24.7 percentage points greater than that of all states; and
- ii. An increase in electricity expenditures for heating that was 98.4 percentage points greater than that of all states, as driven by the following factors:
 - 1) An increase in the share of electricity used for heating that was 98.5 percentage points greater than that of all states; and
 - 2) An increase in the ratio of average electricity-for-heating consumption by low-income households to such consumption by all-income households that was 2.8 percentage points greater than that of all states; and

c. For Mississippi, the following relative increases in expenditures for the following three heating fuels;

- i. An increase in natural gas expenditures that was 25.6 percentage points greater than that of all states, as driven by the following factors:
 - 1) An increase in the share of natural gas used for heating that was 11.5 percentage points greater than that of all; and
 - 2) An increase in natural gas price that was 8.0 percentage points greater than that of all states;

- ii. An increase in propane expenditures that was 44.1 percentage points greater than that of all states, as driven by the following factors:
 - 1) An increase in the share of propane used for heating that was 11.6 percentage points greater than that of all states;
 - 2) An increase in the ratio of average propane-for-heating consumption by low-income households to such consumption by all-income households that was 18.1 percentage points greater than that of all states; and
- iii. An increase in electricity expenditures for heating that was 32.8 percentage points greater than that of all states, as driven by the following factors:
 - 1) An increase in the share of electricity used for heating that was 6.6 percentage points greater than that of all states;
 - 2) A decrease in the ratio of average electricity-for-heating consumption by low-income households to such consumption by all-income households that was 1.4 percentage points smaller than that of all states; and
 - 3) An increase in electricity price that was 3.2 percentage points greater than that of all states.

Data Drivers for the States with the Top Three Year-over-Year 1984-Formula Percentage Decreases

Table A15 lists the states that had the top three year-over-year percentage decreases in gross allocation. It also compares the year-over-year percentage changes in 1984-Formula percentage for these states.

Table A15 Listing of Year-over-Year Percentage Changes in 1984-Formula Percentage for States with Top Three Percentage Decreases in Gross Allocation

| State—Fiscal year | Gross Allocation-- Current Fiscal Year | Gross Allocation-- Previous Fiscal Year | Gross Allocation--% Increase | 1984-Formula Percentage-- Previous Fiscal Year | 1984-Formula Percentage-- Current Fiscal Year | 1984-Formula Percentage--% Difference |
|-------------------|---|--|------------------------------------|---|--|---|
| New York—2016 | \$374,620,637 | \$408,570,296 | -8.31% | 10.7916228% | 9.4770602% | -12.18% |
| Hawaii—2016 | \$6,265,431 | \$6,761,826 | -7.34% | 0.2194086% | 0.1964894% | -10.45% |
| Connecticut—2016 | \$87,079,937 | \$92,477,707 | -5.84% | 2.7112713% | 2.5076536% | -7.51% |

| State—Fiscal year | Gross Allocation-- Current Fiscal Year | Gross Allocation-- Previous Fiscal Year | Gross Allocation--% Increase | 1984-Formula Percentage-- Previous Fiscal Year | 1984-Formula Percentage-- Current Fiscal Year | 1984-Formula Percentage--% Difference |
|--------------------|---|--|---------------------------------|--|---|---|
| Hawaii—2017 | \$5,525,145 | \$6,265,431 | -11.82% | 0.1964894% | 0.1684739% | -14.26% |
| New Jersey—2017 | \$129,005,288 | \$137,298,715 | -6.04% | 3.7659646% | 3.4518473% | -8.34% |
| Delaware—2017 | \$12,926,859 | \$13,563,699 | -4.70% | 0.4088025% | 0.3847412% | -5.89% |
| Hawaii—2018 | \$5,004,477 | \$5,525,145 | -9.42% | 0.1684739% | 0.1485860% | -11.80% |
| New Hampshire—2018 | \$27,994,431 | \$30,648,171 | -8.66% | 0.8616674% | 0.7678659% | -10.89% |
| Massachusetts—2018 | \$147,723,157 | \$158,073,780 | -6.55% | 4.4066715% | 4.0500877% | -8.09% |
| Rhode Island—2019 | \$23,637,361 | \$26,903,933 | -12.14% | 0.7577814% | 0.6275914% | -17.18% |
| Massachusetts—2019 | \$135,995,693 | \$147,723,157 | -7.94% | 4.0500877% | 3.6059047% | -10.97% |
| Connecticut—2019 | \$75,018,998 | \$80,738,355 | -7.08% | 2.2646695% | 2.0690095% | -8.64% |
| Connecticut—2020 | \$68,330,493 | \$75,018,998 | -8.92% | 2.0690095% | 1.8156794% | -12.24% |
| Massachusetts—2020 | \$125,264,771 | \$135,995,693 | -7.89% | 3.6059047% | 3.1994661% | -11.27% |
| New Jersey—2020 | \$118,477,567 | \$123,584,658 | -4.13% | 3.2465385% | 3.0531051% | -5.96% |

The factors that drove those decreases consist of the following:

1. The following for the three greatest decliners from FY 2015 to FY 2016 (i.e., New York, Hawaii, and Connecticut):
 - a. For New York, the following relative decreases in expenditures of the following two heating fuels;
 - i. A decrease in natural gas expenditures that was 2.1 percentage points greater than that of all states, as driven by a decrease in all-purpose, all-income consumption of natural gas that was 2.2 percentage points greater than that of all states; and
 - ii. A decrease in fuel oil expenditures that was 17.4 percentage points greater than that of all states, as driven by a decrease in all-purpose, all-income consumption of fuel oil that was 8.8 percentage points greater than that of all states;
 - b. For Hawaii, a decrease in electricity expenditures for cooling that was 15.5 percentage points greater than that of all states, as driven by the following:

- i. A decrease in all-purpose, all-income consumption of electricity that was 6.2 percentage points greater than that of all states; and
 - ii. A decrease in electricity price that was 3.0 percentage points greater than that of all states; and
- c. For Connecticut, a decrease in natural gas expenditures that was 4.0 percentage points greater than that of all states, as driven by an increase in all-purpose, all-income consumption of natural gas that was 6.2 percentage points smaller than that of all states.

2. The following for the three greatest decliners from FY 2016 to FY 2017 (i.e., Hawaii, New Jersey, and Delaware):

- a. For Hawaii a decrease in electricity expenditures for cooling that was 13.7 percentage points greater than that of all states, as driven by the following:
 - i. A decrease in all-purpose, all-income consumption of electricity that was 1.8 percentage points greater than that of all states;
 - ii. A decrease in the ratio of low-income households to all-income households that was 5.4 percentage points greater than that of all states; and
 - iii. A decrease in electricity price that was 3.0 percentage points greater than that of all states;
- b. For New Jersey, the following relative decreases in expenditures of the following two heating fuels and electricity for cooling:
 - i. A decrease in natural gas expenditures that was 15.7 percentage points greater than that of all states, as driven by the following:
 - 1) A decrease in the ratio of low-income natural gas heaters to all-income natural gas heaters that was 1.0 percentage points greater than that of all states; and
 - 2) A decrease in natural gas price that was 16.8 percentage points greater than that of all states;

- ii. A decrease in electricity expenditures for heating that was 6.3 percentage points greater than that of all states, as driven by the combination of the following factors:
 - 1) A decrease in all-purpose, all-income consumption of electricity that was 3.2 percentage points greater than that of all states; and
 - 2) An increase in electricity price that was 3.0 percentage points smaller than that of all states; and
 - iii. A decrease in electricity expenditures for cooling that was 5.9 percentage points greater than that of all states, as driven by the combination of the following factors:
 - 1) The relative decrease in all-purpose, all-income consumption of electricity.
- c. For Delaware, the following relative decreases in expenditures of the following four heating fuels;
- i. A decrease in natural gas expenditures that was 8.7 percentage points greater than that of all states, as driven by the following:
 - 1) A decrease in the ratio of low-income natural gas heaters to all-income natural gas heaters that was 3.2 percentage points greater than that of all states; and
 - 2) A decrease in natural gas price that was 9.6 percentage points greater than that of all states;
 - ii. A decrease in fuel oil expenditures that was 10.2 percentage points greater than that of all states, as driven by a decrease in the ratio of low-income fuel oil + kerosene heaters to all-income fuel oil + kerosene heaters that was 7.7 percentage points greater than that of all states;
 - iii. A decrease in propane expenditures that was 6.0 percentage points greater than that of all states, as driven by the following:
 - 1) A decrease in the ratio of low-income propane heaters to all-income propane heaters that was 6.0 percentage points greater than that of all states; and
 - 2) A decrease in propane price that was 4.3 percentage points greater than that of all states;

- iv. A decrease in electricity expenditures for heating that was 6.3 percentage points greater than that of all states, as driven by the combination of the following factors:
 - 1) An increase in the ratio of low-income electricity heaters to all-income electricity heaters that was 0.8 percentage points smaller than that of all states; and
 - 2) A decrease in all-purpose, all-income consumption of electricity that was 3.2 percentage points greater than that of all states; and
 - 3) An increase in electricity price that was 0.6 percentage points smaller than that of all states.
3. The following for the three greatest decliners from FY 2017 to FY 2018 (i.e., Hawaii, New Hampshire, and Massachusetts):
- a. For Hawaii, a decrease in electricity expenditures for cooling that was 18.0 percentage points greater than that of all states, as driven by the following:
 - i. A decrease in the ratio of low-income households to all-income households that was 1.6 percentage points greater than that of all states; and
 - ii. A decrease in electricity price that was 21.1 percentage points greater than that of all states; and
 - b. For New Hampshire, a decrease in fuel oil expenditures that was 1.3 percentage points greater than that of all states, as driven by a combination of factors, especially a decrease in fuel-oil price that was 0.3 percentage points greater than that of all states; and
 - c. For Massachusetts, a decrease in fuel oil expenditures that was 6.8 percentage points greater than that of all states, as driven by a decrease in all-purpose, all-income consumption of fuel oil that was 4.3 percentage points greater than that of all states; and
4. The following for the three greatest decliners from FY 2018 to FY 2019 (i.e., Rhode Island, Massachusetts, and Connecticut):
- a. For Rhode Island, the following relative decreases in expenditures of the following two heating fuels;

- i. A decrease in natural gas expenditures that was 7.5 percentage points greater than that of all states, as driven by the following factors:
 - 1) A decrease in all-purpose, all-income consumption of natural gas that was 8.4 percentage points greater than that of all states;
 - 2) A decrease in the ratio of low-income natural gas heaters to all-income natural gas heaters that was 2.3 percentage points greater than that of all states; and
 - ii. A decrease in fuel oil expenditures that was 14.3 percentage points greater than that of all states, as driven by a decrease in all-purpose, all-income consumption of fuel oil that was 15.7 percentage points greater than that of all states;
- b. For Massachusetts, the following relative decreases in expenditures of the following three heating fuels:
- i. A decrease in natural gas expenditures that was 4.6 percentage points greater than that of all states, as driven by a decrease in all-purpose, all-income consumption of natural gas that was 5.8 percentage points greater than that of all states;
 - ii. A decrease in fuel oil expenditures that was 2.1 percentage points greater than that of all states, as driven by a decrease in the ratio of low-income fuel oil + kerosene heaters to all-income fuel oil + kerosene heaters that was 2.1 percentage point greater than that of all states; and
 - iii. A decrease in electricity expenditures for heating that was 5.9 percentage points greater than that of all states, as driven by the combination of the following factors:
 - 1) A decrease in all-purpose, all-income consumption of electricity that was 2.9 percentage points greater than that of all states; and
 - 2) A decrease in electricity price that was 3.4 percentage points greater than that of all states; and
- c. For Connecticut, the following relative decreases in expenditures of the following two heating fuels:

- i. A decrease in fuel oil expenditures that was 2.6 percentage points greater than that of all states, as driven by a decrease in all-purpose, all-income consumption of fuel oil that was 3.9 percentage points greater than that of all states; and
 - ii. A decrease in electricity expenditures for heating that was 5.8 percentage points greater than that of all states, as driven by the following factors:
 - 1) A decrease in electricity price that was 3.6 percentage points greater than that of all states.
- 5. The following for the three greatest decliners from FY 2019 to FY 2020 (i.e., Connecticut, Massachusetts, and New Jersey):
 - a. For Connecticut, the following relative decreases in expenditures of the following two heating fuels:
 - i. A decrease in natural gas expenditures that was 6.5 percentage points greater than that of all states, as driven by the following factors:
 - 1) An increase in the share of natural gas used for heating that was 6.3 percentage points smaller than that of all states; and
 - 2) An increase in the ratio of average natural gas-for-heating consumption by low-income households to such consumption by all-income households that was 6.3 percentage points smaller than that of all states; and
 - ii. An increase in electricity expenditures for heating that was 4.7 percentage points smaller than that of all states, as driven by a decrease in the ratio of average electricity-for-heating consumption by low-income households to such consumption by all-income households that was 5.8 percentage points greater than that of all states;
 - b. For Massachusetts, the following relative decreases in expenditures of the following two heating fuels:

- i. A decrease in natural gas expenditures that was 6.0 percentage points greater than that of all states, as driven by the following factors:
 - 1) An increase in the share of natural gas used for heating that was 6.4 percentage points smaller than that of all states; and
 - 2) A decrease in the ratio of average natural gas-for-heating consumption by low-income households to such consumption by all-income households that was 1.9 percentage points greater than that of all states; and
 - 3) An increase in natural gas price that was 1.8 percentage points smaller than that of all states; and
 - ii. A decrease in propane expenditures that was 15.7 percentage points greater than that of all states, as driven by the following factors:
 - 1) A decrease in the ratio of average propane-for-heating consumption by low-income households to such consumption by all-income households that was 23.6 percentage points greater than that of all states; and
 - 2) An increase in propane price that was 11.5 percentage points smaller than that of all states; and
- c. For New Jersey, the following relative decreases in expenditures of the following two heating fuels and electricity for cooling:
 - i. A decrease in fuel oil expenditures that was 7.0 percentage points greater than that of all states, as driven by the following factors:
 - 1) A decrease in the ratio of fuel oil heaters living in buildings with five or more residential units to such heaters living in other buildings that was 14.4 percentage points greater than that of all states; and
 - 2) A decrease in the share of fuel oil used for heating that was 9.5 percentage points greater than that of all states;

- ii. A decrease in propane expenditures that was 33.3 percentage points greater than that of all states, as driven by a decrease in the ratio of average propane-for-heating consumption by low-income households to such consumption by all-income households that was 23.6 percentage points greater than that of all states; and
- iii. An increase in electricity expenditures for cooling that was 10.4 percentage points smaller than that of all states, as driven by the following factors:
 - 1) A decrease in the share of electricity used for cooling that was 10.9 percentage points greater than that that of all states; and
 - 2) A decrease in the ratio of average electricity-for-cooling consumption by low-income households to such consumption by all-income households that was 7.4 percentage points greater than that of all states.