

**States Go First: How States Can Save Consumers Money, Reduce Energy and Water Waste, and Protect the Environment with New Appliance Standards (Full report at <https://appliance-standards.org/document/states-go-first>)**

**Savings estimates for: Pennsylvania**

|                                | Potential annual savings in 2025 |                    |                         |                        |                        |                             | Potential annual savings in 2035 |                    |                         |                        |                        |                             |
|--------------------------------|----------------------------------|--------------------|-------------------------|------------------------|------------------------|-----------------------------|----------------------------------|--------------------|-------------------------|------------------------|------------------------|-----------------------------|
|                                | Electricity (GWh)                | Natural gas (BBtu) | Water (million gallons) | NO <sub>x</sub> (tons) | SO <sub>2</sub> (tons) | CO <sub>2</sub> (thous. MT) | Electricity (GWh)                | Natural gas (BBtu) | Water (million gallons) | NO <sub>x</sub> (tons) | SO <sub>2</sub> (tons) | CO <sub>2</sub> (thous. MT) |
| Faucets                        | 165.2                            | 1,242              | 4,919                   | 87.6                   | 77.7                   | 139.4                       | 300.4                            | 2,214              | 8,841                   | 145.8                  | 98.6                   | 234.8                       |
| Showerheads                    | 117.9                            | 848                | 2,339                   | 60.8                   | 55.4                   | 97.4                        | 214.3                            | 1,541              | 4,253                   | 102.3                  | 70.4                   | 165.5                       |
| Lawn spray sprinklers          | --                               | --                 | 219                     | --                     | --                     | --                          | --                               | --                 | 358                     | --                     | --                     | --                          |
| Toilets                        | --                               | --                 | 1,209                   | --                     | --                     | --                          | --                               | --                 | 3,280                   | --                     | --                     | --                          |
| Computers and monitors         | 379.0                            | --                 | --                      | 71.3                   | 178.2                  | 174.5                       | 424.4                            | --                 | --                      | 63.6                   | 139.3                  | 167.8                       |
| High CRI fluorescent lamps     | 497.9                            | --                 | --                      | 93.7                   | 234.1                  | 234.2                       | 165.1                            | --                 | --                      | 24.7                   | 54.2                   | 65.6                        |
| Air purifiers                  | 91.4                             | --                 | --                      | 17.2                   | 43.0                   | 40.6                        | 149.5                            | --                 | --                      | 22.4                   | 49.1                   | 58.3                        |
| Pool pump replacement motors   | 169.3                            | --                 | --                      | 31.9                   | 79.6                   | 75.2                        | 0.0                              | --                 | --                      | 0.0                    | 0.0                    | 0.0                         |
| Commercial fryers              | 1.8                              | 822                | --                      | 37.8                   | 0.9                    | 44.5                        | 4.0                              | 1,793              | --                      | 82.2                   | 1.3                    | 96.8                        |
| Commercial dishwashers         | 7.6                              | 180                | 251                     | 9.6                    | 3.6                    | 13.2                        | 18.3                             | 434                | 604                     | 22.5                   | 6.0                    | 30.4                        |
| Commercial steam cookers       | 13.8                             | 73                 | 235                     | 5.9                    | 6.5                    | 10.4                        | 30.1                             | 160                | 512                     | 11.8                   | 9.9                    | 20.5                        |
| Portable air conditioners      | 70.7                             | --                 | --                      | 13.3                   | 33.3                   | 31.4                        | 135.0                            | --                 | --                      | 20.2                   | 44.3                   | 52.7                        |
| Urinals                        | --                               | --                 | 382                     | --                     | --                     | --                          | --                               | --                 | 833                     | --                     | --                     | --                          |
| Audio/video equipment          | 53.7                             | --                 | --                      | 10.1                   | 25.2                   | 23.9                        | 53.7                             | --                 | --                      | 8.0                    | 17.6                   | 21.0                        |
| Uninterruptible power supplies | 74.0                             | --                 | --                      | 13.9                   | 34.8                   | 34.7                        | 82.0                             | --                 | --                      | 12.3                   | 26.9                   | 32.6                        |
| Telephones                     | 27.1                             | --                 | --                      | 5.1                    | 12.7                   | 12.5                        | 27.1                             | --                 | --                      | 4.1                    | 8.9                    | 10.7                        |
| Water coolers                  | 15.7                             | --                 | --                      | 3.0                    | 7.4                    | 7.4                         | 28.6                             | --                 | --                      | 4.3                    | 9.4                    | 11.4                        |
| Ventilation fans               | 13.5                             | --                 | --                      | 2.5                    | 6.4                    | 6.0                         | 29.7                             | --                 | --                      | 4.4                    | 9.7                    | 11.6                        |
| Portable electric spas         | 24.7                             | --                 | --                      | 4.7                    | 11.6                   | 11.0                        | 44.9                             | --                 | --                      | 6.7                    | 14.8                   | 17.5                        |
| Hot food holding cabinets      | 9.2                              | --                 | --                      | 1.7                    | 4.3                    | 4.3                         | 20.0                             | --                 | --                      | 3.0                    | 6.6                    | 8.0                         |
| Compressors                    | 11.2                             | --                 | --                      | 2.1                    | 5.2                    | 5.3                         | 26.4                             | --                 | --                      | 4.0                    | 8.7                    | 10.5                        |
| <b>Total</b>                   | <b>1,744</b>                     | <b>3,164</b>       | <b>9,553</b>            | <b>472</b>             | <b>820</b>             | <b>966</b>                  | <b>1,753</b>                     | <b>6,141</b>       | <b>18,681</b>           | <b>542</b>             | <b>576</b>             | <b>1,016</b>                |

Assuming a compliance date of 2020 for almost all of the recommended standards. Products are listed in order of potential national net present value savings. Totals may not sum due to rounding. Potential savings for pool pump replacement motors are zero in 2035 because we assume that the recommended standard would affect just seven years of product sales beginning in 2021.

|                                | Potential annual utility bill savings (million 2016\$) |            | Net present value savings (million 2016\$) | Benefit-cost ratio | Payback period (years) |
|--------------------------------|--|------------|--|--------------------|------------------------|
|                                | In 2025  | In 2035    |  |                    |                        |
| Faucets                        | 96.5   | 194.5      | 1,451.3                                    | no cost            | 0.0                    |
| Showerheads                    | 55.1   | 111.4      | 831.9                                      | no cost            | 0.0                    |
| Lawn spray sprinklers          | 2.5  | 4.7        | 30.9                                       | 8.2                | 1.0                    |
| Toilets                        | 13.7   | 43.0       | 376.7                                      | no cost            | 0.0                    |
| Computers and monitors         | 47.8   | 56.6       | 278.2                                      | 2.5                | 2.2                    |
| High CRI fluorescent lamps     | 54.1   | 20.0       | 170.2                                      | 1.8                | 2.9                    |
| Air purifiers                  | 14.2   | 24.5       | 129.6                                      | 3.1                | 2.7                    |
| Pool pump replacement motors   | 26.3   | 0.0        | 148.7                                      | 9.2                | 0.7                    |
| Commercial fryers              | 9.3  | 21.9       | 102.3                                      | 2.8                | 3.5                    |
| Commercial dishwashers         | 5.7  | 15.2       | 96.4                                       | 10.3               | 1.1                    |
| Commercial steam cookers       | 5.0  | 12.0       | 79.0                                       | 11.4               | 0.9                    |
| Portable air conditioners      | 11.0   | 22.2       | 124.0                                      | 3.9                | 2.5                    |
| Urinals                        | 4.3  | 10.9       | 77.8                                       | no cost            | 0.0                    |
| Audio/video equipment          | 8.3  | 8.8        | 74.0                                       | no cost            | 0.0                    |
| Uninterruptible power supplies | 8.2  | 9.6        | 51.5                                       | 2.8                | 2.1                    |
| Telephones                     | 3.3  | 3.5        | 29.7                                       | no cost            | 0.0                    |
| Water coolers                  | 1.7  | 3.2        | 24.6                                       | no cost            | 0.0                    |
| Ventilation fans               | 2.1  | 4.9        | 35.6                                       | no cost            | 0.0                    |
| Portable electric spas         | 3.8  | 7.4        | 56.3                                       | no cost            | 0.0                    |
| Hot food holding cabinets      | 1.0  | 2.3        | 11.9                                       | 3.5                | 2.9                    |
| Compressors                    | 0.9  | 2.3        | 12.3                                       | 3.7                | 2.9                    |
| <b>Total</b>                   | <b>375</b>   | <b>579</b> | <b>4,193</b>                               | <b>7.6</b>         | <b>–</b>               |

Assuming a compliance date of 2020 for almost all of the recommended standards. Products are listed in order of potential national net present value savings. Net present value savings take into account both utility bill savings and estimated impacts on product costs for items sold between 2020 and 2035. Totals may not sum due to rounding. The total benefit-cost ratio is calculated as the present value of the total utility bill savings from products sold through 2035 for the package of 21 recommended standards divided by the present value of the total additional costs.

## Cumulative savings estimates for: **Pennsylvania**

|                                | Potential cumulative savings through 2035 |                          |                               |                           |                           |                                   |
|--------------------------------|---|--------------------------|-------------------------------|---------------------------|---------------------------|-----------------------------------|
|                                | Electricity<br>(GWh)                      | Natural<br>gas<br>(TBtu) | Water<br>(billion<br>gallons) | NO <sub>x</sub><br>(tons) | SO <sub>2</sub><br>(tons) | CO <sub>2</sub><br>(thous.<br>MT) |
| Faucets                        | 3,304                                     | 24.5                     | 97.7                          | 1,674.2                   | 1,309.7                   | 2,668.1                           |
| Showerheads                    | 2,358                                     | 17.0                     | 46.8                          | 1,169.2                   | 934.4                     | 1,874.1                           |
| Lawn spray sprinklers          | --  | --                       | 4.1                           | --                        | --                        | --                                |
| Toilets                        | --  | --                       | 27.8                          | --                        | --                        | --                                |
| Computers and monitors         | 5,490                                     | --                       | --                            | 944.1                     | 2,228.3                   | 2,346.1                           |
| High CRI fluorescent lamps     | 5,186                                     | --                       | --                            | 954.4                     | 2,246.5                   | 2,303.9                           |
| Air purifiers                  | 1,719                                     | --                       | --                            | 290.8                     | 685.1                     | 711.7                             |
| Pool pump replacement motors   | 1,712                                     | --                       | --                            | 304.7                     | 737.6                     | 730.4                             |
| Commercial fryers              | 40  | 17.9                     | --                            | 823.0                     | 15.6                      | 969.1                             |
| Commercial dishwashers         | 171                                       | 4.1                      | 5.7                           | 214.0                     | 67.0                      | 289.3                             |
| Commercial steam cookers       | 301                                       | 1.6                      | 5.1                           | 123.3                     | 118.3                     | 213.6                             |
| Portable air conditioners      | 1,453                                     | --                       | --                            | 244.4                     | 574.5                     | 599.5                             |
| Urinals                        | --  | --                       | 8.3                           | --                        | --                        | --                                |
| Audio/video equipment          | 715                                       | --                       | --                            | 123.5                     | 291.4                     | 299.3                             |
| Uninterruptible power supplies | 1,062                                     | --                       | --                            | 182.6                     | 431.0                     | 458.9                             |
| Telephones                     | 361                                       | --                       | --                            | 62.5                      | 147.5                     | 155.2                             |
| Water coolers                  | 315                                       | --                       | --                            | 53.0                      | 124.7                     | 134.9                             |
| Ventilation fans               | 296                                       | --                       | --                            | 49.5                      | 116.0                     | 121.6                             |
| Portable electric spas         | 494                                       | --                       | --                            | 83.3                      | 196.0                     | 204.2                             |
| Hot food holding cabinets      | 200                                       | --                       | --                            | 33.5                      | 78.7                      | 85.5                              |
| Compressors                    | 251                                       | --                       | --                            | 41.9                      | 98.1                      | 106.8                             |
| <b>Total</b>                   | <b>25,428</b>                             | <b>65</b>                | <b>196</b>                    | <b>7,372</b>              | <b>10,400</b>             | <b>14,272</b>                     |

Assuming a compliance date of 2020 for almost all of the recommended standards. Products are listed in order of potential national net present value savings. Totals may not sum due to rounding.