

## Appliance Standards Awareness Project

### 2019 State Appliance Standards Recommendations

#### Savings estimates for: Massachusetts

|                                      | Potential annual savings in 2025 |                          |                               |                           |                           |                                   | Potential annual savings in 2035 |                          |                               |                           |                           |                                   |
|--------------------------------------|----------------------------------|--------------------------|-------------------------------|---------------------------|---------------------------|-----------------------------------|----------------------------------|--------------------------|-------------------------------|---------------------------|---------------------------|-----------------------------------|
|                                      | Electricity<br>(GWh)             | Natural<br>gas<br>(BBtu) | Water<br>(million<br>gallons) | NO <sub>x</sub><br>(tons) | SO <sub>2</sub><br>(tons) | CO <sub>2</sub><br>(thous.<br>MT) | Electricity<br>(GWh)             | Natural<br>gas<br>(BBtu) | Water<br>(million<br>gallons) | NO <sub>x</sub><br>(tons) | SO <sub>2</sub><br>(tons) | CO <sub>2</sub><br>(thous.<br>MT) |
| Air compressors                      | 1.4                              | --                       | --                            | 0.3                       | 0.1                       | 0.3                               | 4.2                              | --                       | --                            | 0.9                       | 0.4                       | 1.1                               |
| Air purifiers                        | 32.4                             | --                       | --                            | 5.6                       | 2.7                       | 7.0                               | 64.8                             | --                       | --                            | 13.6                      | 6.2                       | 15.9                              |
| Commercial dishwashers               | 3.5                              | 82                       | 115                           | 4.4                       | 0.3                       | 5.1                               | 10.2                             | 242                      | 338                           | 13.2                      | 1.0                       | 15.4                              |
| Commercial fryers                    | 0.6                              | 311                      | --                            | 14.2                      | 0.05                      | 16.6                              | 1.5                              | 828                      | --                            | 38.0                      | 0.1                       | 44.4                              |
| Commercial hot-food holding cabinets | 3.6                              | --                       | --                            | 0.6                       | 0.3                       | 0.8                               | 9.7                              | --                       | --                            | 2.0                       | 0.9                       | 2.4                               |
| Commercial steam cookers             | 6.1                              | 32                       | 104                           | 2.5                       | 0.5                       | 3.1                               | 16.3                             | 87                       | 277                           | 7.4                       | 1.6                       | 8.7                               |
| Computers and computer monitors      | 151.7                            | --                       | --                            | 26.3                      | 12.6                      | 32.9                              | 190.6                            | --                       | --                            | 40.1                      | 18.2                      | 47.5                              |
| Faucets                              | 30.1                             | 565                      | 1,694                         | 31.0                      | 2.5                       | 36.5                              | 66.8                             | 1,242                    | 3,731                         | 70.6                      | 6.4                       | 82.4                              |
| High CRI fluorescent lamps           | 64.7                             | --                       | --                            | 11.2                      | 5.4                       | 14.1                              | 19.0                             | --                       | --                            | 4.0                       | 1.8                       | 4.7                               |
| Portable air conditioners            | 37.6                             | --                       | --                            | 6.5                       | 3.1                       | 8.1                               | 112.9                            | --                       | --                            | 23.7                      | 10.8                      | 27.8                              |
| Portable electric spas               | 2.5                              | --                       | --                            | 0.4                       | 0.2                       | 0.5                               | 5.5                              | --                       | --                            | 1.1                       | 0.5                       | 1.3                               |
| Residential ventilating fans         | 4.0                              | --                       | --                            | 0.7                       | 0.3                       | 0.9                               | 8.8                              | --                       | --                            | 1.9                       | 0.8                       | 2.2                               |
| Showerheads                          | 21.2                             | 391                      | 806                           | 21.5                      | 1.8                       | 25.4                              | 47.2                             | 870                      | 1,791                         | 49.5                      | 4.5                       | 57.8                              |
| Spray sprinkler bodies               | --                               | --                       | 435                           | --                        | --                        | --                                | --                               | --                       | 870                           | --                        | --                        | --                                |
| Toilets (water closets)              | --                               | --                       | 453                           | --                        | --                        | --                                | --                               | --                       | 1,416                         | --                        | --                        | --                                |
| Uninterruptible power supplies       | 30.1                             | --                       | --                            | 5.2                       | 2.5                       | 6.5                               | 40.8                             | --                       | --                            | 8.6                       | 3.9                       | 10.2                              |
| Urinals                              | --                               | --                       | 61                            | --                        | --                        | --                                | --                               | --                       | 163                           | --                        | --                        | --                                |
| Water coolers                        | 6.6                              | --                       | --                            | 1.1                       | 0.5                       | 1.4                               | 14.7                             | --                       | --                            | 3.1                       | 1.4                       | 3.7                               |
| <b>Total</b>                         | <b>396</b>                       | <b>1,382</b>             | <b>3,667</b>                  | <b>132</b>                | <b>33</b>                 | <b>159</b>                        | <b>613</b>                       | <b>3,270</b>             | <b>8,586</b>                  | <b>278</b>                | <b>59</b>                 | <b>326</b>                        |

Assuming a compliance date of 2021 for almost all the recommended standards. Totals may not sum due to rounding.

|                                      | Potential annual utility bill savings (million 2017\$) |            | Net present value savings (million 2017\$) | Benefit-cost ratio | Payback period (years) |
|--------------------------------------|--|------------|--|--------------------|------------------------|
|                                      | In 2025  | In 2035    |  |                    |                        |
| Air compressors                      | 0.2  | 0.6        | 3.5  | 6.1                | 1.6                    |
| Air purifiers                        | 7.6  | 16.4       | 95.7                                       | 4.7                | 1.8                    |
| Commercial dishwashers               | 3.0  | 9.5        | 59.4                                       | 11.5               | 0.9                    |
| Commercial fryers                    | 4.0  | 10.8       | 47.9                                       | 2.9                | 3.1                    |
| Commercial hot-food holding cabinets | 0.7  | 1.9        | 10.9                                       | 5.9                | 1.6                    |
| Commercial steam cookers             | 2.7  | 7.9        | 51.2                                       | 13.8               | 0.7                    |
| Computers and computer monitors      | 31.1   | 41.3       | 248.4                                      | 4.0                | 1.3                    |
| Faucets                              | 35.2   | 86.0       | 620.8                                      | no cost            | 0.0                    |
| High CRI fluorescent lamps           | 12.2   | 4.1        | 68.5                                       | 5.4                | 1.4                    |
| Portable air conditioners            | 8.8  | 28.6       | 155.9                                      | 5.8                | 1.6                    |
| Portable electric spas               | 0.6  | 1.4        | 10.1                                       | no cost            | 0.0                    |
| Residential ventilating fans         | 0.9  | 2.2        | 16.3                                       | no cost            | 0.0                    |
| Showerheads                          | 20.2   | 49.4       | 357.4                                      | no cost            | 0.0                    |
| Spray sprinkler bodies               | 5.0  | 11.6       | 73.8                                       | 8.2                | 1.0                    |
| Toilets (water closets)              | 5.2  | 18.9       | 168.5                                      | no cost            | 0.0                    |
| Uninterruptible power supplies       | 5.7  | 8.0        | 50.5                                       | 4.6                | 1.2                    |
| Urinals                              | 0.7  | 2.2        | 15.0                                       | no cost            | 0.0                    |
| Water coolers                        | 1.2  | 2.8        | 20.6                                       | no cost            | 0.0                    |
| <b>Total</b>                         | <b>145</b>   | <b>304</b> | <b>2,074</b>                               | <b>10.5</b>        | <b>-</b>               |

Assuming a compliance date of 2021 for almost all the recommended standards. Net present value savings take into account both utility bill savings and estimated impacts on product costs for items sold between 2021 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 recommended standards divided by the present value of the total additional costs.

## Cumulative savings estimates for: [Massachusetts](#)

|   | 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) |
| Air compressors                         | 35  | --                       | --                            | 7.0                       | 3.2                       | 8.0                               |
| Air purifiers                           | 681                                       | --                       | --                            | 133.1                     | 60.1                      | 158.0                             |
| Commercial dishwashers                  | 86  | 2.0                      | 2.8                           | 109.4                     | 7.6                       | 127.2                             |
| Commercial fryers                       | 14  | 7.5                      | --                            | 342.1                     | 1.2                       | 399.0                             |
| Commercial hot-food holding<br>cabinets | 88  | --                       | --                            | 17.3                      | 7.8                       | 19.7                              |
| Commercial steam cookers                | 147                                       | 0.8                      | 2.5                           | 64.4                      | 13.0                      | 74.4                              |
| Computers and computer<br>monitors      | 2,307                                     | --                       | --                            | 445.4                     | 202.3                     | 520.5                             |
| Faucets                                 | 668                                       | 12.5                     | 37.4                          | 698.7                     | 59.2                      | 817.6                             |
| High CRI fluorescent lamps              | 642                                       | --                       | --                            | 119.4                     | 55.0                      | 141.1                             |
| Portable air conditioners               | 989                                       | --                       | --                            | 195.9                     | 88.1                      | 232.2                             |
| Portable electric spas                  | 55  | --                       | --                            | 10.7                      | 4.8                       | 12.7                              |
| Residential ventilating fans            | 88  | --                       | --                            | 17.4                      | 7.8                       | 20.6                              |
| Showerheads                             | 472                                       | 8.7                      | 17.9                          | 488.8                     | 41.8                      | 572.1                             |
| Spray sprinkler bodies                  | --  | --                       | 9.1                           | --                        | --                        | --                                |
| Toilets (water closets)                 | --  | --                       | 11.2                          | --                        | --                        | --                                |
| Uninterruptible power supplies          | 487                                       | --                       | --                            | 94.2                      | 42.8                      | 108.9                             |
| Urinals                                 | --  | --                       | 1.5                           | --                        | --                        | --                                |
| Water coolers                           | 147                                       | --                       | --                            | 28.8                      | 13.0                      | 32.8                              |
| <b>Total</b>                            | <b>6,905</b>                              | <b>31</b>                | <b>82</b>                     | <b>2,773</b>              | <b>608</b>                | <b>3,245</b>                      |

Assuming a compliance date of 2021 for almost all the recommended standards. Totals may not sum due to rounding.