

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: Massachusetts

	Potential annual savings in 2025						Potential annual savings in 2035					
	Electricity (GWh)	Natural gas (BBtu)	Water (million gallons)	NO _x (tons)	SO ₂ (tons)	CO ₂ (thous. MT)	Electricity (GWh)	Natural gas (BBtu)	Water (million gallons)	NO _x (tons)	SO ₂ (tons)	CO ₂ (thous. MT)
Faucets	45.5	867	2,591	47.9	3.4	54.2	82.8	1,553	4,656	87.3	5.8	98.0
Showerheads	32.5	598	1,232	33.2	2.4	37.6	59.1	1,088	2,239	61.4	4.2	68.9
Lawn spray sprinklers	--	--	526	--	--	--	--	--	861	--	--	--
Toilets	--	--	638	--	--	--	--	--	1,729	--	--	--
Computers and monitors	185.0	--	--	34.1	13.6	32.8	207.2	--	--	41.5	14.6	38.5
High CRI fluorescent lamps	258.5	--	--	47.6	19.0	45.7	85.6	--	--	17.2	6.0	15.8
Air purifiers	47.0	--	--	8.6	3.5	8.4	76.9	--	--	15.4	5.4	14.4
Pool pump replacement motors	68.5	--	--	12.6	5.0	12.2	0.0	--	--	0.0	0.0	0.0
Commercial fryers	1.0	438	--	20.1	0.1	23.4	2.1	955	--	43.9	0.1	51.1
Commercial dishwashers	4.0	96	134	5.1	0.3	5.8	9.7	231	322	12.5	0.7	14.1
Commercial steam cookers	7.4	39	125	3.1	0.5	3.4	16.0	85	273	7.1	1.1	7.5
Portable air conditioners	58.0	--	--	10.7	4.3	10.3	110.7	--	--	22.2	7.8	20.8
Urinals	--	--	203	--	--	--	--	--	444	--	--	--
Audio/video equipment	27.6	--	--	5.1	2.0	4.9	27.6	--	--	5.5	1.9	5.2
Uninterruptible power supplies	35.1	--	--	6.5	2.6	6.2	38.9	--	--	7.8	2.7	7.2
Telephones	15.4	--	--	2.8	1.1	2.7	15.4	--	--	3.1	1.1	2.9
Water coolers	9.4	--	--	1.7	0.7	1.7	17.1	--	--	3.4	1.2	3.2
Ventilation fans	6.9	--	--	1.3	0.5	1.2	15.3	--	--	3.1	1.1	2.9
Portable electric spas	3.0	--	--	0.5	0.2	0.5	5.4	--	--	1.1	0.4	1.0
Hot food holding cabinets	4.9	--	--	0.9	0.4	0.9	10.7	--	--	2.1	0.8	2.0
Compressors	2.0	--	--	0.4	0.1	0.3	4.7	--	--	0.9	0.3	0.9
Total	812	2,038	5,448	242	60	252	785	3,912	10,524	336	55	354

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	49.4	100.8	748.0	no cost	0.0
Showerheads	28.0	57.5	426.3	no cost	0.0
Lawn spray sprinklers	6.0	11.3	74.3	8.2	1.0
Toilets	7.3	22.7	198.6	no cost	0.0
Computers and monitors	30.9	37.8	210.6	3.3	1.7
High CRI fluorescent lamps	40.9	14.9	173.7	2.6	2.0
Air purifiers	8.5	15.6	85.4	3.7	2.4
Pool pump replacement motors	12.4	0.0	71.1	10.6	0.7
Commercial fryers	5.2	12.0	57.5	2.9	3.4
Commercial dishwashers	3.3	8.7	55.5	11.1	1.0
Commercial steam cookers	3.0	7.3	48.5	13.0	0.8
Portable air conditioners	10.5	22.4	128.5	4.6	2.2
Urinals	2.3	5.8	41.5	no cost	0.0
Audio/video equipment	5.0	5.6	44.9	no cost	0.0
Uninterruptible power supplies	5.6	6.7	40.7	4.0	1.5
Telephones	2.5	2.8	22.6	no cost	0.0
Water coolers	1.5	2.9	21.6	no cost	0.0
Ventilation fans	1.3	3.1	22.0	no cost	0.0
Portable electric spas	0.5	1.1	8.0	no cost	0.0
Hot food holding cabinets	0.8	1.8	10.4	5.2	2.0
Compressors	0.3	0.8	5.2	7.6	1.4
Total	225	341	2,495	8.3	-

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: **Massachusetts**

	Potential cumulative savings through 2035					
	Electricity (GWh)	Natural gas (TBtu)	Water (billion gallons)	NO _x (tons)	SO ₂ (tons)	CO ₂ (thous. MT)
Faucets	911	17.2	51.4	962.2	64.9	1,081.7
Showerheads	650	12.0	24.6	673.0	46.3	756.1
Lawn spray sprinklers	--	--	9.9	--	--	--
Toilets	--	--	14.7	--	--	--
Computers and monitors	2,681	--	--	524.7	192.1	501.2
High CRI fluorescent lamps	2,692	--	--	517.6	197.8	524.8
Air purifiers	884	--	--	174.1	63.0	163.9
Pool pump replacement motors	693	--	--	133.8	49.8	128.0
Commercial fryers	21	9.6	--	439.2	1.5	511.3
Commercial dishwashers	91	2.2	3.0	116.9	6.5	132.4
Commercial steam cookers	160	0.9	2.7	70.6	11.4	75.5
Portable air conditioners	1,191	--	--	235.1	84.8	220.9
Urinals	--	--	4.4	--	--	--
Audio/video equipment	367	--	--	71.8	26.4	67.9
Uninterruptible power supplies	504	--	--	98.7	36.2	94.9
Telephones	206	--	--	40.2	14.8	38.7
Water coolers	188	--	--	37.2	13.4	35.4
Ventilation fans	152	--	--	30.0	10.8	28.2
Portable electric spas	59	--	--	11.7	4.2	11.0
Hot food holding cabinets	107	--	--	21.1	7.6	20.1
Compressors	44	--	--	8.7	3.1	8.3
Total	11,602	42	111	4,166	835	4,400

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.