

# State Level Appliance Efficiency Standards

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**ASAP**  
APPLIANCE STANDARDS  
AWARENESS PROJECT



# About us



**ASAP is a team within the non-profit ACEEE.**

**We work to advance cost-effective appliance and efficiency standards at the state and federal level.**

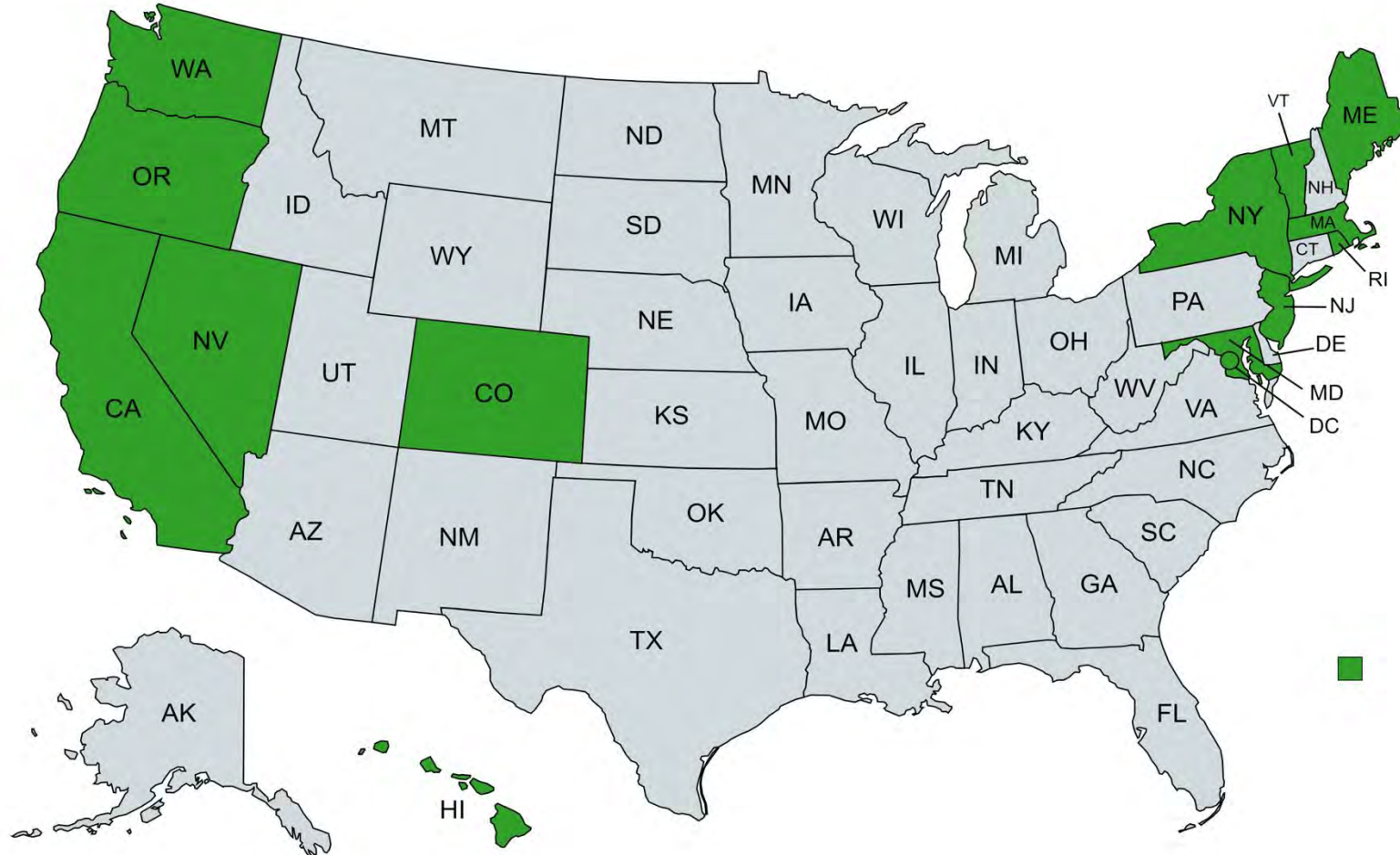


# Appliance Efficiency Standards 101

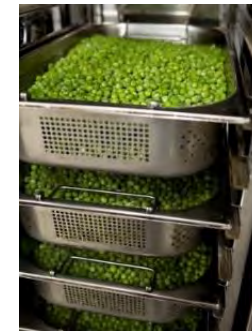
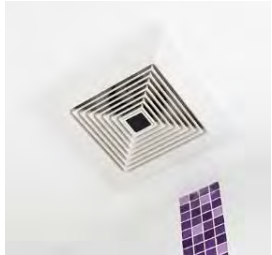
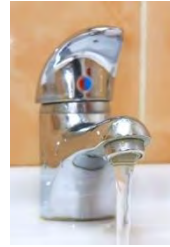
- Setting minimum energy or water efficiency requirements for **the sale** of certain new products
- Raise the floor for efficiency, driving efficiency improvements into full range of product choices
- In general, states can set efficiency standards for any product the federal government has not
- Since 1970s states have adopted standards, led to federal standards ~ 60 products



# 13 states and DC have adopted new appliance standards since 2018



# ASAP Model Bill (19 Products)



# Why These Products?

## They meet key criteria

- **No federal standard (no preemption challenges to navigate)**
- **Existing efficiency specification available from trusted sources** for states to reference
  - ENERGY STAR, California Energy Commission, or industry created
  - Example: “**Commercial Fryers sold in the state shall meet the requirements of ENERGY STAR Version 2.0 for Commercial Fryers.**”
- **Preserves consumer choice:** multiple manufacturers already make products meeting the proposed standards
- **Confirmed savings** with market data



# Illinois Savings – Energy, Water, Air Pollution

|                              | Potential annual savings in 2040 |                    |                         |                        |                        |  |
|------------------------------|----------------------------------|--------------------|-------------------------|------------------------|------------------------|--|
|                              | Electricity (GWh)                | Natural gas (BBtu) | Water (million gallons) | NO <sub>x</sub> (tons) | SO <sub>2</sub> (tons) | CO <sub>2</sub> (thousand metric tons) |
| Commercial battery chargers  | 12.1                             | --                 | --                      | 0.5                    | 0.6                    | 1.3                                    |
| Commercial dishwashers       | 33.5                             | 429                | 597                     | 20.7                   | 1.6                    | 26.4                                   |
| Commercial fryers            | 2.4                              | 1,660              | --                      | 75.3                   | 0.1                    | 88.1                                   |
| Commercial ovens             | 23.6                             | 171                | --                      | 8.6                    | 1.1                    | 11.7                                   |
| Commercial steam cookers     | 7.6                              | 72                 | 186                     | 3.6                    | 0.4                    | 4.7                                    |
| Faucets                      | 107.5                            | 1,222              | 5,102                   | 59.5                   | 5.2                    | 76.7                                   |
| Gas fireplaces               | --                               | 472                | --                      | 21.4                   | --                     | 25.0                                   |
| High CRI fluorescent lamps   | 22.4                             | --                 | --                      | 0.9                    | 1.1                    | 2.5                                    |
| Portable electric spas       | 163.6                            | --                 | --                      | 6.2                    | 7.9                    | 18.2                                   |
| Residential ventilating fans | 13.5                             | --                 | --                      | 0.5                    | 0.7                    | 1.5                                    |
| Server power supplies        | 108.1                            | --                 | --                      | 4.1                    | 5.2                    | 12.0                                   |
| Showerheads                  | 80.3                             | 912                | 2,603                   | 44.4                   | 3.9                    | 57.2                                   |
| Spray sprinkler bodies       | --                               | --                 | 11,666                  | --                     | --                     | --                                     |
| Toilets (water closets)      | --                               | --                 | 1,652                   | --                     | --                     | --                                     |
| Urinals                      | --                               | --                 | 276                     | --                     | --                     | --                                     |
| Water coolers                | 74.1                             | --                 | --                      | 2.8                    | 3.6                    | 8.3                                    |
| <b>Total</b>                 | <b>649</b>                       | <b>4,938</b>       | <b>22,082</b>           | <b>249</b>             | <b>31</b>              | <b>334</b>                             |

**Equivalent to taking ~78,000 vehicles off the road every year by 2040**



# Illinois Savings – Utility Bills

|                              | Potential annual utility bill savings (million 2023\$) |            | Payback period (years) |
|------------------------------|--|------------|------------------------|
|                              | In 2030  | In 2040    |                        |
| Commercial battery chargers  | 0.2  | 0.9        | 3.8                    |
| Commercial dishwashers       | 6.0  | 19.3       | 0.9                    |
| Commercial fryers            | 4.3  | 16.5       | 2.7                    |
| Commercial ovens             | 1.1  | 4.0        | 6.2                    |
| Commercial steam cookers     | 1.3  | 5.1        | 0.8                    |
| Faucets                      | 40.0   | 129.9      | 0.0                    |
| Gas fireplaces               | 1.2  | 5.2        | 1.2                    |
| High CRI fluorescent lamps   | 4.5  | 2.5        | 1.9                    |
| Portable electric spas       | 9.0  | 24.3       | 0.6                    |
| Residential ventilating fans | 0.5  | 2.0        | 0.0                    |
| Server power supplies        | 7.2  | 10.9       | 1.0                    |
| Showerheads                  | 22.6   | 73.2       | 0.0                    |
| Spray sprinkler bodies       | 69.8   | 229.7      | 0.7                    |
| Toilets (water closets)      | 7.6  | 32.5       | 0.0                    |
| Urinals                      | 1.4  | 5.4        | 0.0                    |
| Water coolers                | 2.5  | 7.5        | 0.0                    |
| <b>Total</b>                 | <b>179</b>   | <b>569</b> |                        |

**Saving \$569 million on utility bills annually in 2040**



# National Consumer Advocate Support



**Consumer Federation of America**



# Clean Lighting



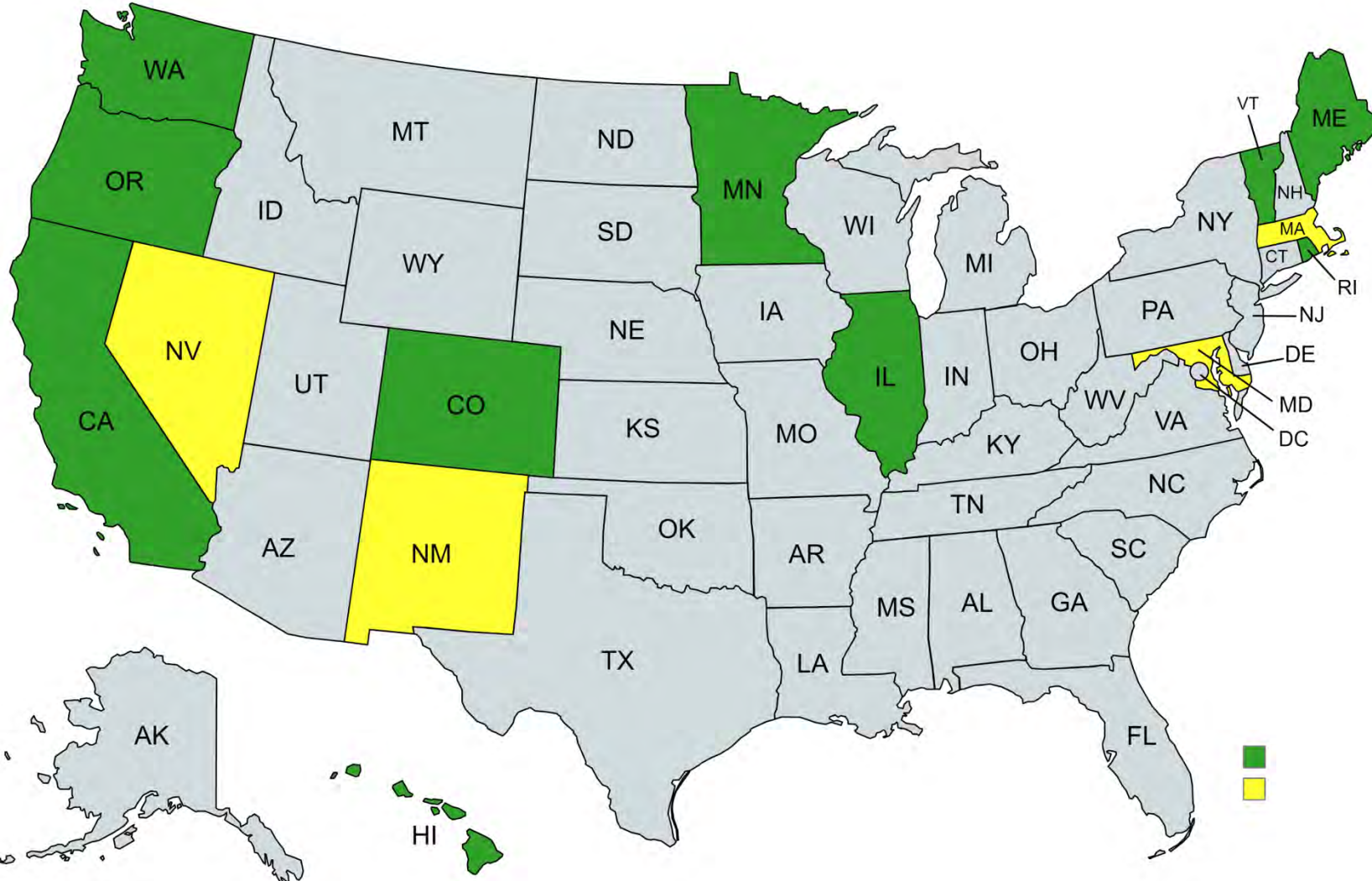
# Quick Background – Clean Lighting

**Fluorescent light bulbs still seeing significant sales, contain mercury by design.**

- GOAL: Phase out sales of fluorescent light bulbs in favor of LEDs
- LEDs are 2X more energy efficient, last 2-3X longer, don't contain mercury
- Large savings on energy, emissions, utility bill, and mercury pollution by switching to LEDs



# State Action (2022-2024)



## Passed Laws (10)

CA, OR, HI, CO, RI, ME,  
VT, WA, IL, MN

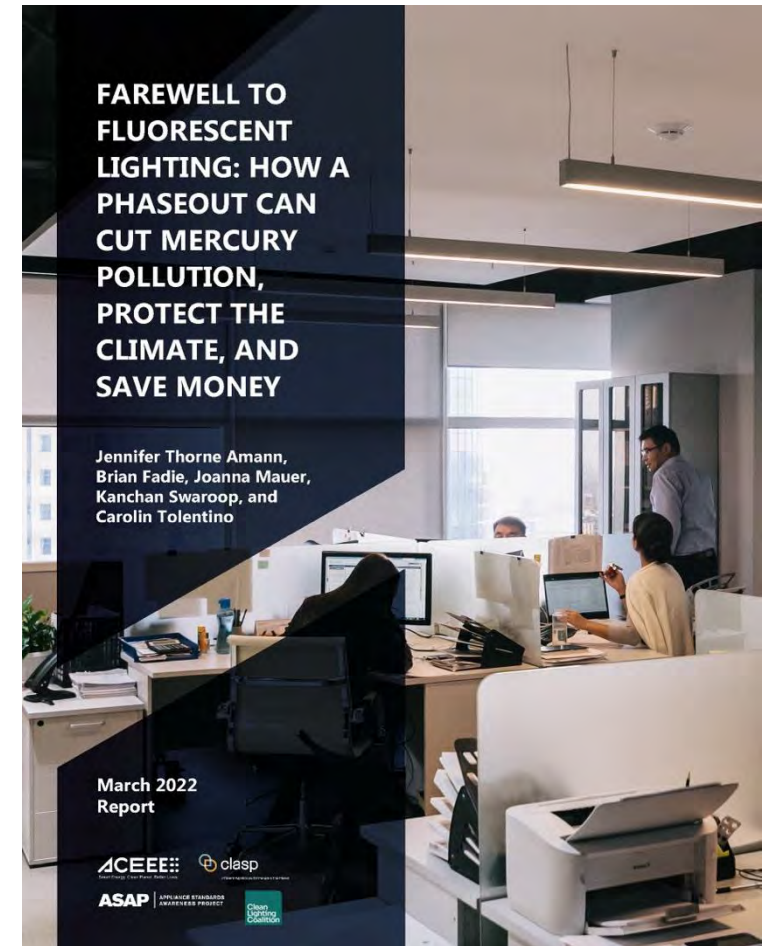
## Bills Introduced (4)

MA, MD, NV, NM

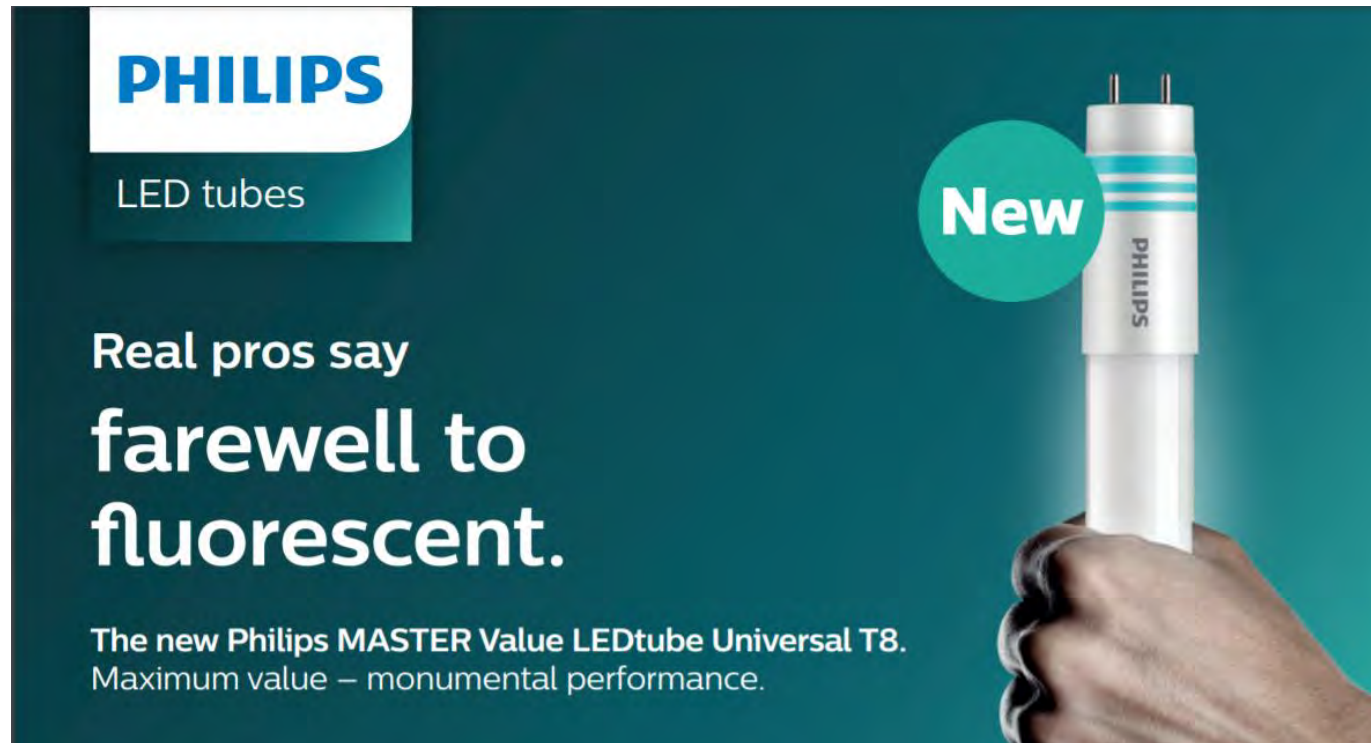
# ASAP/ACEEE Lighting Report

## Answers Qs regarding LEDs replacing fluorescents

- Availability of replacement LEDs ✓
- Performance ability of LEDs ✓
- Life cycle cost of LEDs vs fluorescents ✓
- State-by-state savings of switch to LEDs ✓
  - Electricity, GHG, consumer savings, mercury



## Manufacturer Statements



**PHILIPS**  
LED tubes

Real pros say  
**farewell to  
fluorescent.**

The new Philips MASTER Value LEDtube Universal T8.  
Maximum value – monumental performance.

**New**

**“The MASTER Value LEDtube Universal T8 is the ideal alternative to standard fluorescent tubes for all demanding lighting applications.”**

# Light Bulb Economic Analysis - Commercial Sector

| Baseline LED lamp type | Incremental cost (2020\$) | First-year electricity bill savings (2020\$) | Lifecycle cost savings (2020\$) | Payback period (years) |
|------------------------|---------------------------|--|---------------------------------|------------------------|
| 4-foot T12- 40 W       | 2.59                      | 8.52   | 44                              | 0.3                    |
| 4-foot T12- 34 W       | 3.67                      | 6.12   | 35                              | 0.6                    |
| 4-foot T8              | 0.54                      | 4.14   | 27                              | 0.1                    |
| 4-foot T5              | 2.29                      | 5.49   | 38                              | 0.4                    |
| 4-foot T5 high output  | 4.61                      | 10.90  | 74                              | 0.4                    |
| Pin-based CFL          | 3.02                      | 6.81   | 22                              | 0.4                    |

← Most common

# Massachusetts Clean Lighting Savings

| State         | Potential cumulative reductions through 2050 |                                     |                                       | Cumulative electricity savings through 2050 (GWh) | Cumulative electricity bill savings through 2050 (million 2023\$) |
|---------------|--|-------------------------------------|---------------------------------------|---|---|
|               | Mercury in lamps shipped (lbs)               | Power plant mercury emissions (lbs) | CO <sub>2</sub> emissions (thous. MT) |   |   |
| Massachusetts | 166  | 0.0                                 | 567                                   | 7,088   | 1,270   |



Removing ~132,000 gas powered cars from road for a year while saving \$1.2 billion



# LED Economic Analysis

## Typical School

- 980 fluorescent lamps
- \$3,700 per year savings
- \$24,000 lifecycle savings
- Payback period: 2 months

## Typical Small Office

- 240 fluorescent lamps
- \$900 per year savings
- \$6,000 lifecycle savings
- Payback period: 2 months

# National Consumer Advocate Support

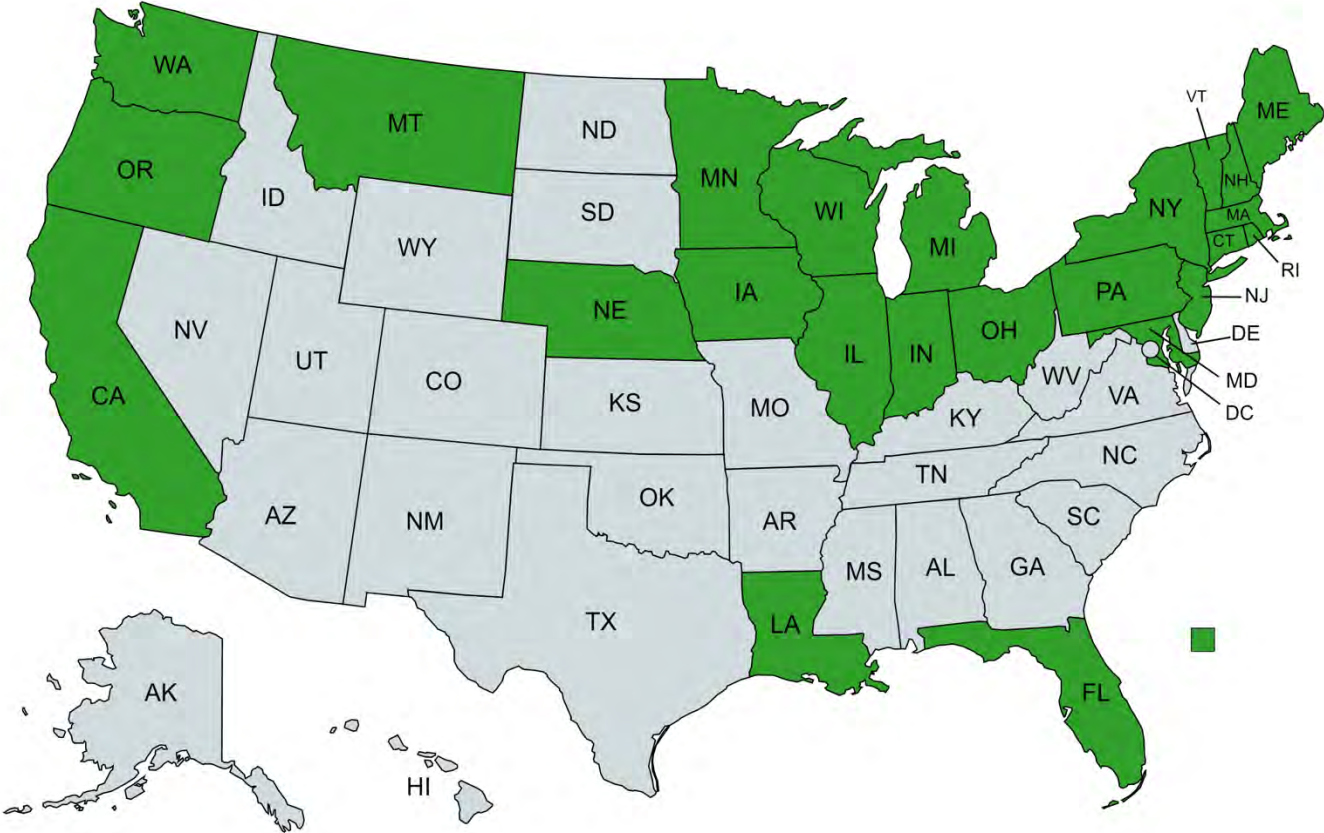


**Consumer Federation of America**



# State Mercury Policies is the Phase Out Approach

Existing State Mercury Policies (24)



# Contacts

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