

Mercury Thermostat Collection Act of 2008

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and Green Technology

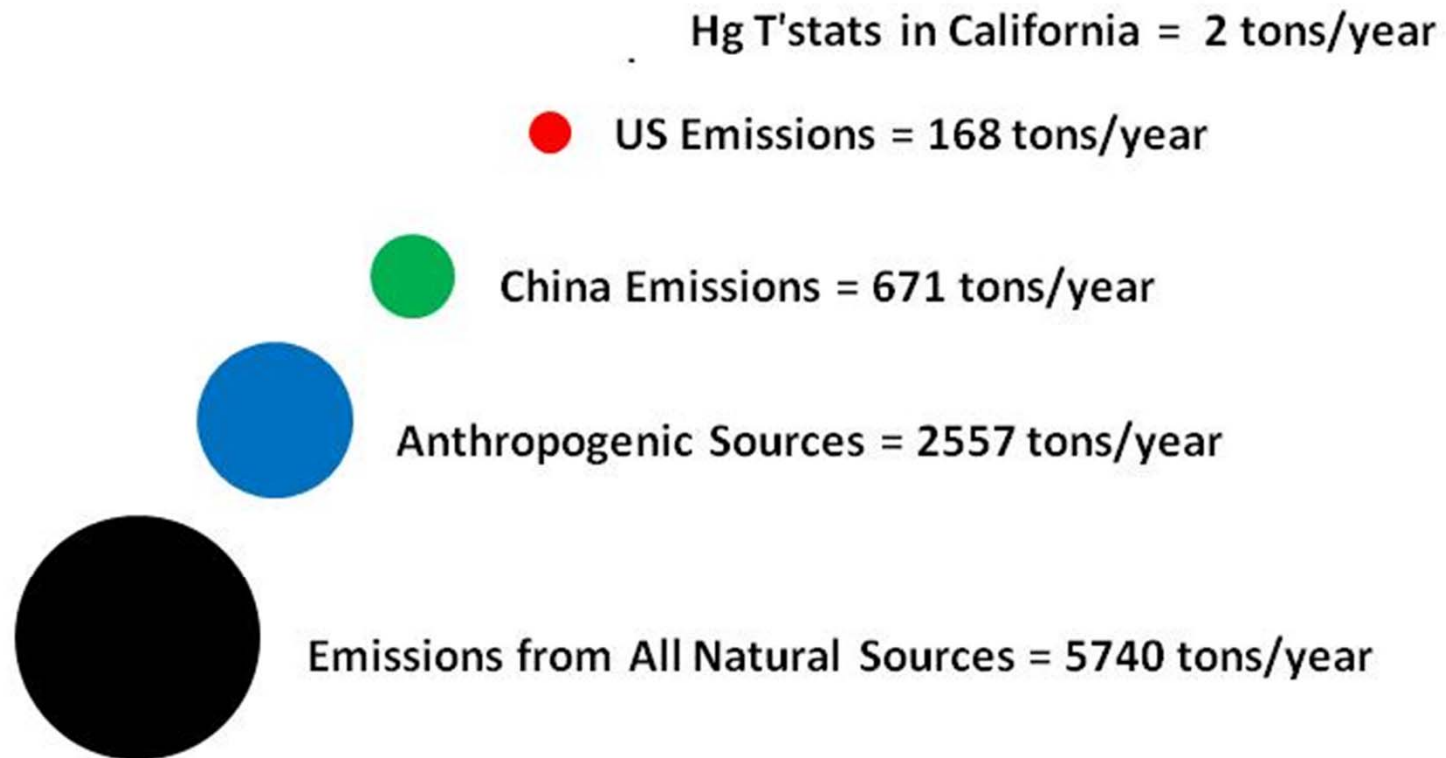
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CA HSC §25214.8.20

It is the intent of this article to provide for the collection and recycling of the maximum feasible number of out-of-service mercury-added thermostats.

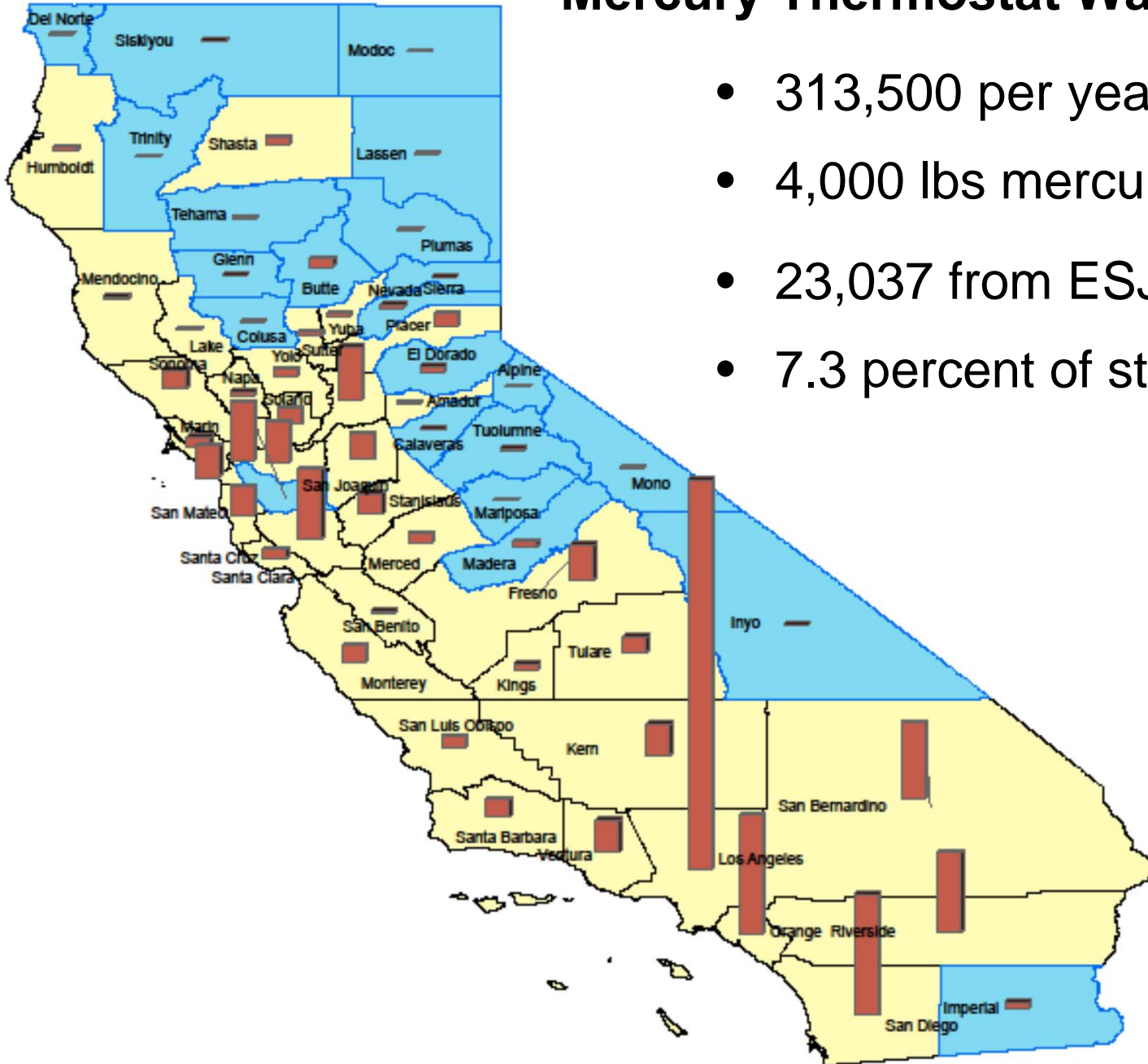
Global Mercury Emissions



Source: N. Pirrone, Atmos. Chem. Phys., 2010

Mercury Thermostat Waste Generation

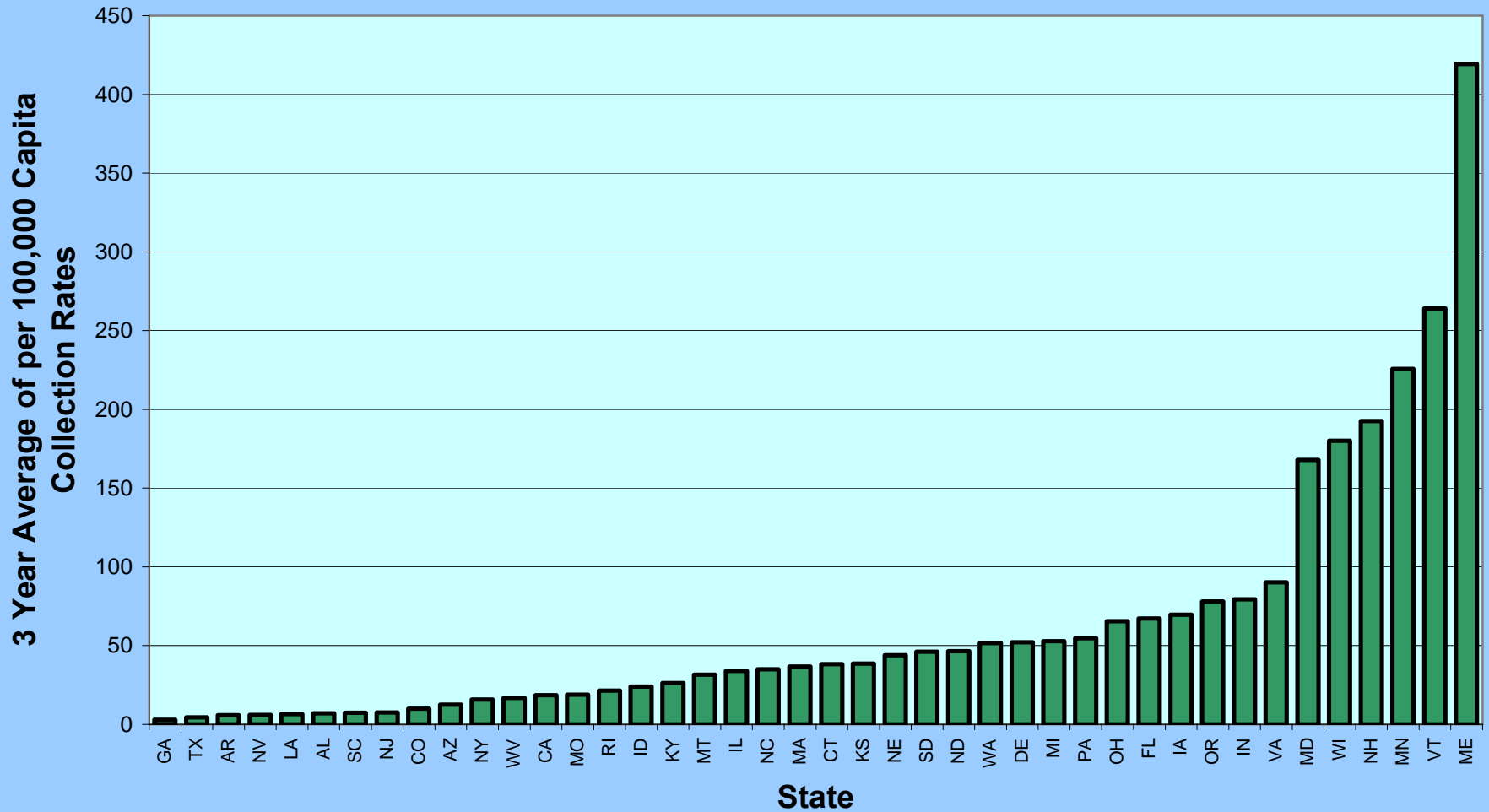
- 313,500 per year, statewide
- 4,000 lbs mercury, statewide
- 23,037 from ESJPA counties
- 7.3 percent of state total



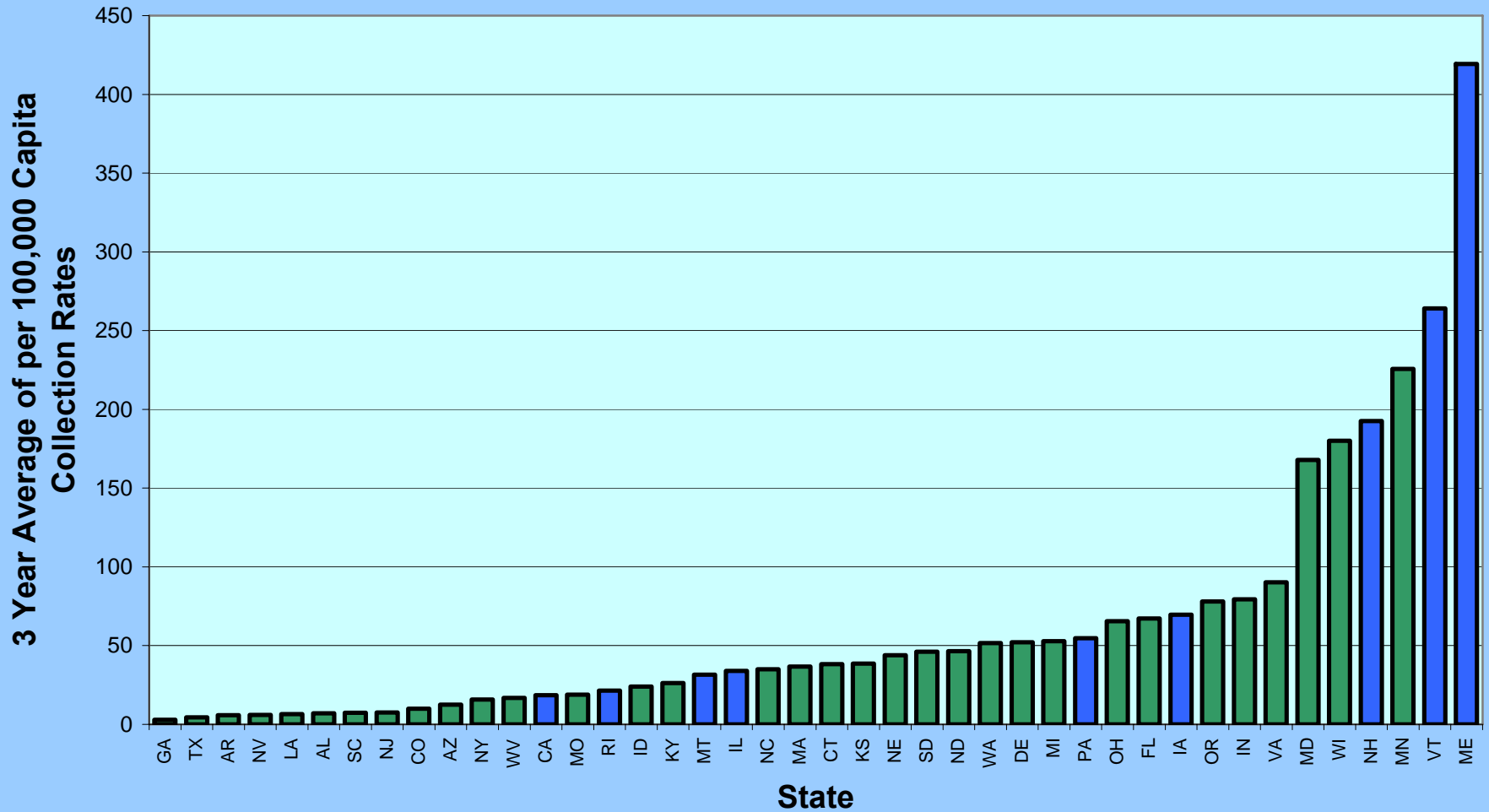
Mercury Thermostat Collection Act of 2008

- Manufacturers - Extended Producer Responsibility (<http://www.thermostat-recycle.org>)
- Wholesalers - must act as collection locations
- Retailers - must provide customer notification
- Contractors - must follow Universal Waste Rules
- **The Department -**
 - (1) *Shall establish **collection rates** for manufacturer's programs*
 - (2) *Shall develop **methodology** to calculate the annual waste flow*

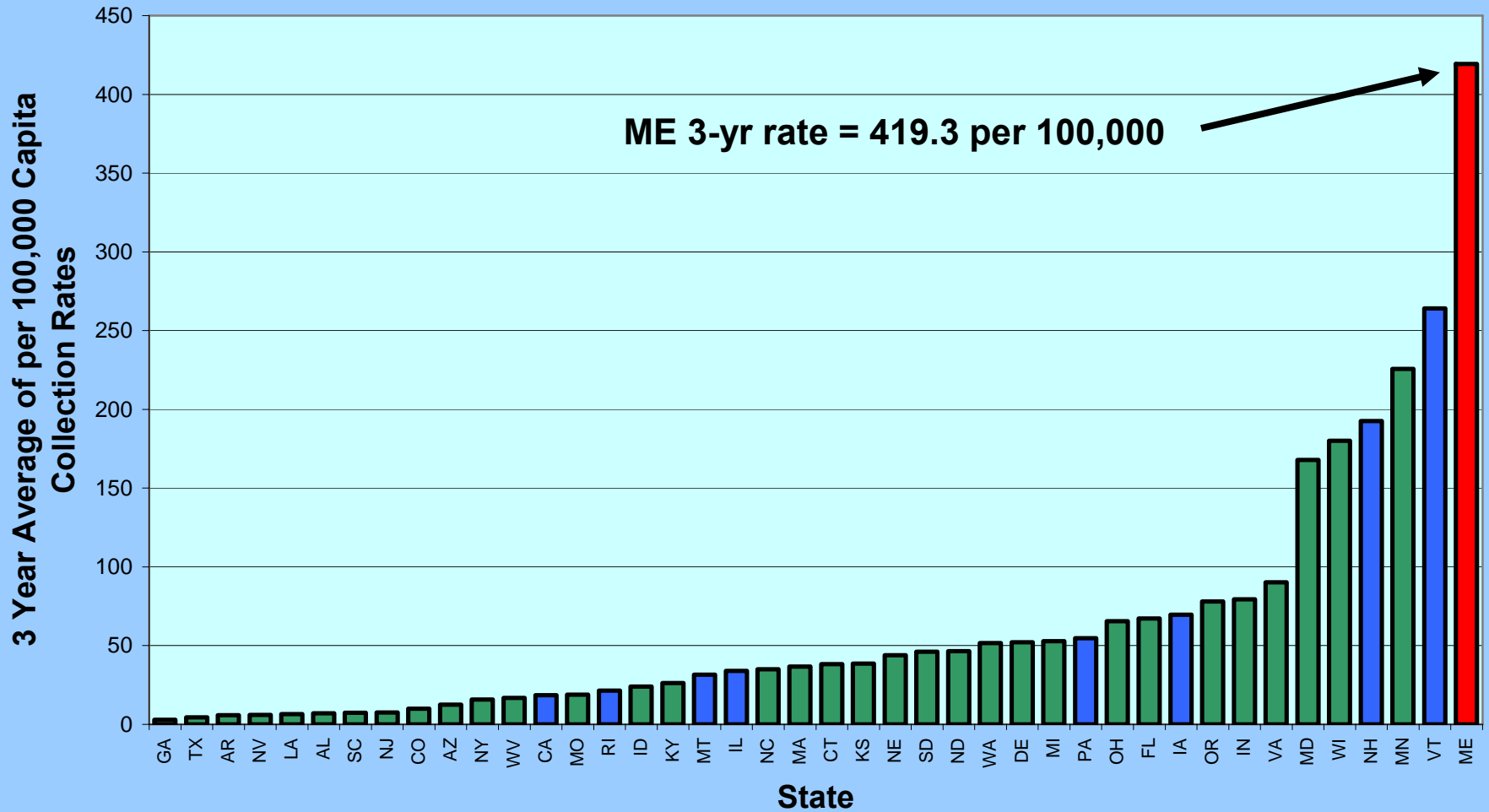
Benchmarking California's Performance Using State-by-State Comparison of Collection Rates



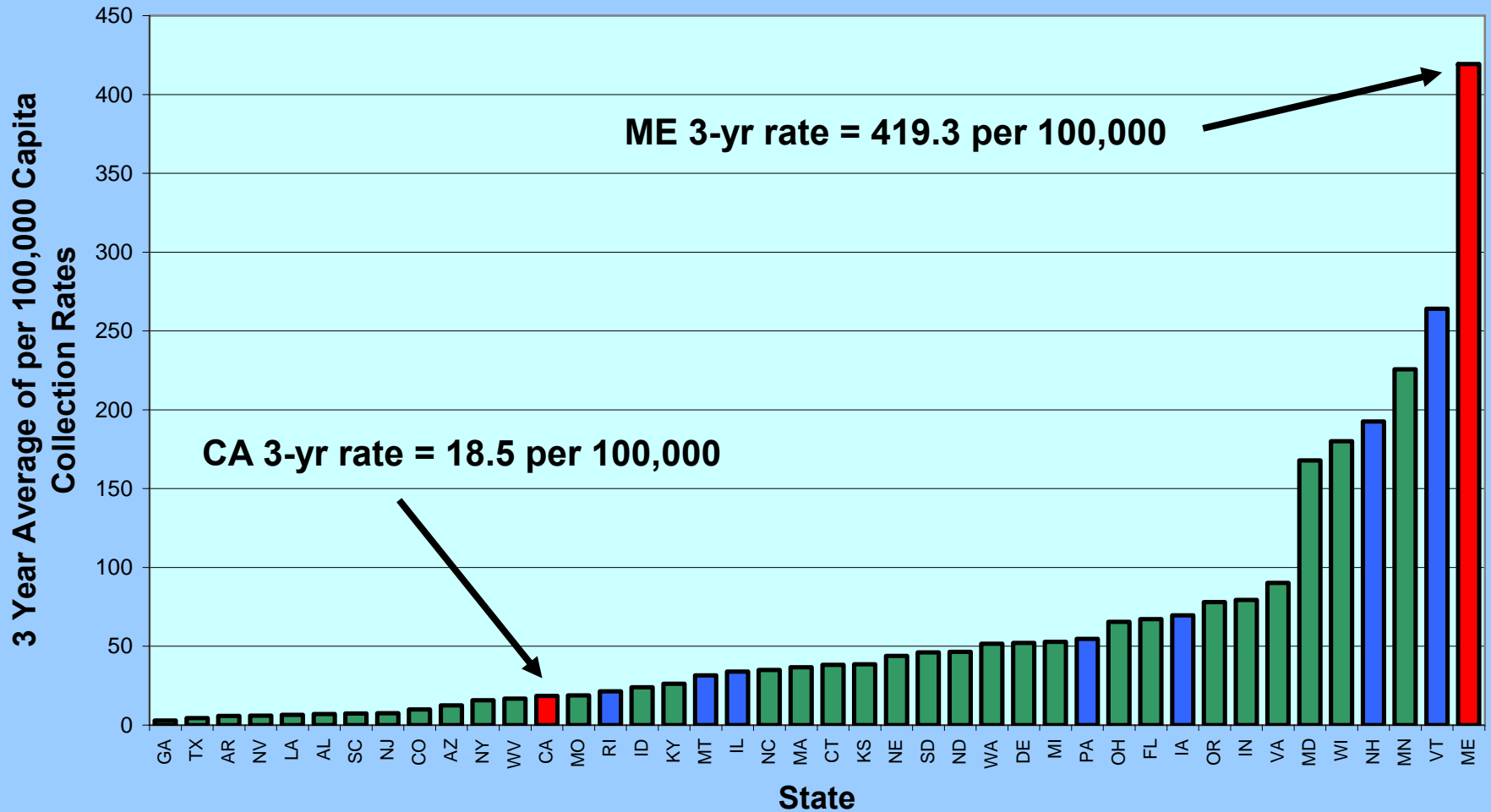
Benchmarking California's Performance Using State-by-State Comparison of Collection Rates



Benchmarking California's Performance Using State-by-State Comparison of Collection Rates

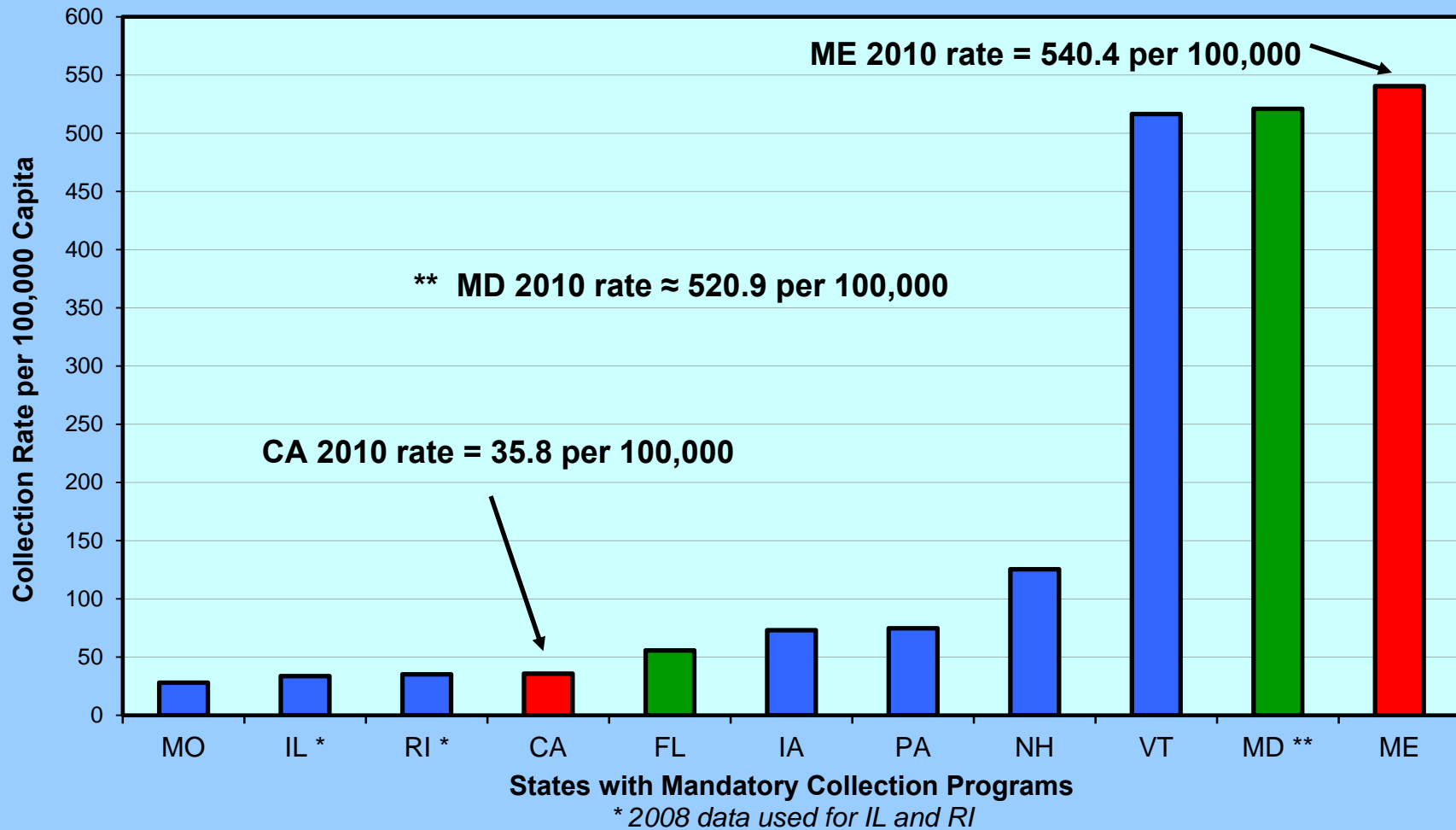


Benchmarking California's Performance Using State-by-State Comparison of Collection Rates



Reaching Best-in-Class Performance

2010 Performance for States with Mandatory Programs



Development of California's Methodology

- HVAC contractors generate ~ 85 percent of all out-of-service mercury-added thermostats
- Therefore, the most effective collection and recycling program would focus primarily on contractors
- The statute required DTSC to develop a Methodology to calculate annual waste flows
- The proposed regulations satisfy the statute by establishing an annual reporting requirement on contractors
- Contractor's reports "Close-the-Loop" on waste generation, collection, and disposal practices
- Contractor's reports increase compliance and drive recycling

Methodology to Calculate Annual Flows

$$T_{AW} = \left[\frac{(T_{HVAC} \times N_{HVAC})}{P_{HVAC}} \right] + (T_D \times N_D) + T_{UHWM} + T_{HHWCF}$$

T_{AW} - Number of out-of-service mercury-added thermostats that become waste annually

T_{HVAC} - Average number of mercury-added thermostats removed per HVAC contractor, as reported annually by HVAC contractors

N_{HVAC} - Number of licensed HVAC contractors, as reported by the California State Contractors Licensing Board

P_{HVAC} - Percent of thermostat work attributable to HVAC contractors, expressed as a decimal fraction

T_D - Average number of mercury-added thermostats removed per demolition contractor, as reported annually by demolition contractors

N_D - Number of licensed demolition contractors, as reported by the California State Contractors Licensing Board

T_{UHWM} - Number of out-of-service mercury-added thermostats reported on Uniform Hazardous Waste Manifests under California Waste Code 615

T_{HHWCF} - Number of out-of-service mercury-added thermostats reported in the California Household Hazardous Waste Collection Facilities Form 303

Contractor's Annual Reports Include

- (1) The business location's name and mailing address;
- (2) Contractors State Licensing Board Identification Number;
- (3) Name, address and telephone number of the person who should be contacted regarding the business' out-of-service mercury-added thermostat removal activities;
- (4) The number of contractors that work from that business location;
- (5) The number of mercury-added thermostats removed by the contractors and technicians that work from that business location;
- (6) The business location's service area; and
- (7) Names and addresses of the wholesaler, retailer or household hazardous waste collection facility where the business location takes the out-of-service mercury-added thermostats to be collected.

Number of Thermostats Becoming Waste

§67388.4

“(a)... the number of out-of-service mercury-added thermostats becoming waste are 313,500 for the 2012 calendar year and 306,500 for the 2013 calendar year.”

Chapter 35 Mercury Thermostat Collection Rate Requirements

§67388.1 Scope

- (a) This chapter establishes the performance requirements that specify collection rates and a methodology for the calculation of out-of-service mercury-added thermostats becoming waste annually.
 (b) Nothing in this chapter is a limitation on the power of any other governmental agency to adopt or enforce additional requirements related to the management of the mercury-added thermostat materials.

Authority: Section 58012 and 25150, Health and Safety Code. Reference: Section 25214.8.17, Health and Safety Code.

§67388.2 Applicability

Effective January 1, 2012 the requirements of this chapter shall apply to

- (a) Manufacturers as described in section 67388.3.
 (b) HVAC contractors as described in section 67388.3.
 (c) Demolition contractors as described in section 67388.3.

Authority: Section 58012 and 25150, Health and Safety Code. Reference: Section 25214.8.17, Health and Safety Code.

§67388.3 Definitions

The definitions set forth in section 66280.10 of this division shall apply unless otherwise defined. The following terms shall apply to the definitions used in this chapter. The definitions of the following terms are stated the Health and Safety Code sections unless otherwise noted.

“Collection Rate” means the number of out-of-service mercury added thermostats collected, as reported by a manufacturer or group of manufacturers divided by the calculated number of out of service mercury added thermostats becoming waste annually, as defined in section 67388.4, expressed as a percentage.

“Demolition contractor” has the meaning of a C-21 contractor as defined in Cal. Code Regs., title 16, section 832.21.

“Household hazardous waste collection facility (HHWCF)” has the meaning of a facility as defined in Health and Safety Code, section 25218.1(f).

“Heating, ventilating and air-conditioning (HVAC) Contractor” has the meaning as defined in Cal. Code Regs., title 16, section 832.20.

“Manufacturer” has the meaning as defined in Health and Safety Code, section 25214.8.11(a).

“Mercury-added thermostat” has the meaning as defined in Health and Safety Code, section 25214.8.11(b).

“Out-of-service mercury-added thermostat” has the meaning as defined in Health and Safety Code, section 25214.8.11(c).

“Program” has the meaning as defined in Health and Safety Code, section 25214.8.11(d).

“Retailer” has the meaning as defined in Health and Safety Code, section 25214.8.11(e).

“Thermostat” has the meaning as defined in Health and Safety Code, section 25214.8.11(f).

“Wholesaler” has the meaning as defined in Health and Safety Code, section 25214.8.11(g).

Authority: Section 58012 and 25150 Health and Safety Code. Reference: Section 25214.8.11 and 25218.1, and 25214.8.17 Health and Safety Code. Reference: Cal. Code Regs., tit. 16, §832.20 and 832.21.

§67388.4 Methodology for Calculation of Number of Out-of-Service Mercury Added Thermostats Becoming Waste Annually

- (a) For the purpose of the calculation in section 67388.5 the number of out-of-service mercury-added thermostats becoming waste are 313,500 for the 2012 calendar year and 306,500 for the 2013 calendar year.
 (b) Beginning on March 1, 2014, the department shall post the number of out-of-service mercury-added thermostats that became waste for the previous year based on the following methodology:

$$T_{AW} = \left[\frac{(T_{HVAC} \times N_{HVAC})}{P_{HVAC}} \right] + (T_D \times N_D) + T_{HHWCF}$$

T_{AW} - Number of out-of-service mercury-added thermostats that become waste annually

T_{HVAC} - Average number of mercury-added thermostats removed per HVAC contractor, as reported annually by HVAC contractors

N_{HVAC} - Number of licensed HVAC contractors, as reported by the California State Contractors License Board

P_{HVAC} - Percent of thermostat work attributable to HVAC contractors, expressed in decimal form

T_D - Average number of mercury-added thermostats removed per demolition contractor, as reported annually by demolition contractors

N_D - Number of licensed demolition contractors, as reported by the California State Contractors License Board

Based on Methodology Beginning in 2014

§67388.4

“(b) ... Beginning on March 1, 2014, the department shall post the number ... based on the ... methodology”

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“Demolition contractor” has the meaning of a C-21 contractor as defined in Cal. Code Regs., title 16, section 832.21.

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“Out-of-service mercury-added thermostat” has the meaning as defined in Health and Safety Code, section 25214.8.11(c).

“Program” has the meaning as defined in Health and Safety Code, section 25214.8.11(d).

“Retailer” has the meaning as defined in Health and Safety Code, section 25214.8.11(e).

“Thermostat” has the meaning as defined in Health and Safety Code, section 25214.8.11(f).

“Wholesaler” has the meaning as defined in Health and Safety Code, section 25214.8.11(g).

Authority: Section 58012 and 25150 Health and Safety Code. Reference: Section 25214.8.11 and 25218.1, and 25214.8.17 Health and Safety Code. Reference: Cal. Code Regs., tit. 16, §832.20 and 832.21.

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 (b) Beginning on March 1, 2014, the department shall post the number of out-of-service mercury-added thermostats that became waste for the previous year based on the following methodology:

$$T_{AW} = \left[\frac{(T_{HVAC} \times N_{HVAC})}{P_{HVAC}} \right] + (T_D \times N_D) + T_{HHWCF}$$

T_{AW} - Number of out-of-service mercury-added thermostats that become waste annually

T_{HVAC} - Average number of mercury-added thermostats removed per HVAC contractor, as reported annually by HVAC contractors

N_{HVAC} - Number of licensed HVAC contractors, as reported by the California State Contractors License Board

P_{HVAC} - Percent of thermostat work attributable to HVAC contractors, expressed in decimal form

T_D - Average number of mercury-added thermostats removed per demolition contractor, as reported annually by demolition contractors

N_D - Number of licensed demolition contractors, as reported by the California State Contractors License Board

Manufacturers' Annual Collection Rate

§67388.5

“(a) ...The following percentages are the collection rates ...

2012 – 20%
2013 – 40%
2014 – 60%
2015 – 80%

(b) After 2015 the collection rate will be 80%.”

T_{UHW} - Number of out-of-service mercury-added thermostats reported on Uniform Hazardous Waste Manifests under California Waste Code 615
 T_{HHWF} - Number of out-of-service mercury-added thermostats reported in the California Household Hazardous Waste Collection Facilities Form 303(b). When necessary, the department may calculate the number of out-of-service mercury-added thermostats that are reported by weight based on the following formula:

$$T = (T_{HHWF} \times 453.6 \text{ grams/lb}) + k$$

T - Number of out-of-service thermostats collected
 T_{HHWF} - Weight of out-of-service thermostats collected
k - Conversion factor for weight of thermostat = 100 grams per thermostat

Authority: Section 58012 and 25150, Health and Safety Code. Reference: Section 25214.8.15, 25214.8.16 and 25214.8.17 Health and Safety Code.

§67388.5 Manufacturers' Annual Collection Rate

(a) The manufacturer or group of manufacturers shall meet or exceed the annual collection rate established by the department. The collection rates for out-of-service mercury-added thermostats are:

2012 – 20%
2013 – 40%
2014 – 60%
2015 – 80%

(b) After 2015 the collection rate will be 80%.

(c) In the case of multiple manufacturers operating individual programs, the department shall assign a percentage of the collection rate to each manufacturer or group of manufacturers based upon:

- (1) Each manufacturer or group of manufacturers providing current market sales data to determine their percentage of thermostats sales compared to the total sales of thermostats by all manufacturers or group of manufacturers; or
- (2) The department will determine the proportion of thermostats attributed to each manufacturer or group of manufacturers based on previous annual reports pursuant to Health and Safety Code 25214.8.13(i).
- (d) On July 1 and January 1 of each calendar, the department shall post a notice on its Internet Web site listing each manufacturer or group of manufacturers that is not in compliance with this chapter and Health and Safety Code. 25214.8.12

Authority: Section 58012 and 25150, Health and Safety Code. Reference: Section 25218.8.13 Health and Safety Code.

§67388.6 Manufacturers' Compliance Requirements

(a) The department may order a manufacturer, or group of manufacturers operating a program to revise its program and to undertake actions to comply with section 67388.5 and Health and Safety Code sections 25214.8.12, 25214.8.13 if a manufacturer or group of manufacturers is deemed by the department to be out of compliance with the collection rate in section 67388.5, then the department shall require the manufacturers to follow the steps in subsection (b) to increase their collection rate to achieve the required collection rate in section 67388.5.

(b) If a manufacturers collection is:

(1) less than the collection rate, then:

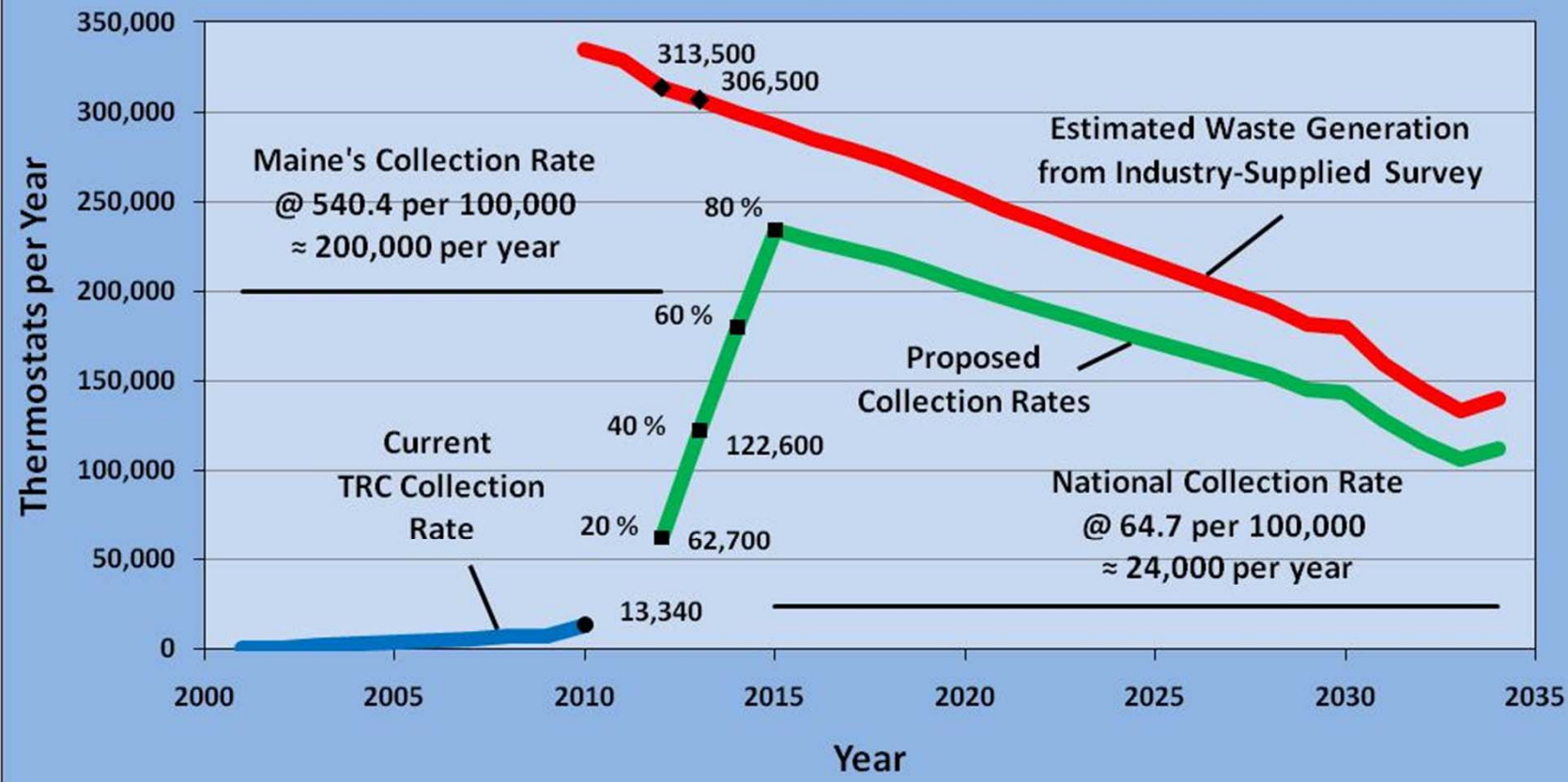
- a. Implement a financial incentive program for the recycling of each mercury added thermostat collected by a manufacturer or group of manufacturers.
- b. The manufacturer or group of manufactures shall revise its program to undertake actions to comply with the collection rate of this chapter by entering into a Consent Agreement with the Department that specifies the revisions to the program and the actions the manufacturers will undertake.
- c. Should a manufacturer or group of manufacturers fail to revise its program to undertake actions to comply with this Chapter, the Department may issue an order pursuant to Health and Safety code sections 25187 and/or 25214.8.17

(2) less than 50% of the collection rate, then:

- a. The manufacturers or group of manufacturers shall comply with the requirements of subsection (b)(1).
- b. The department may issue an order pursuant to Health and Safety Code section 25187 that imposes an administrative penalty.

Program	Mandatory Collection Rates	2010 Collection
California	Agency Establishes Collection Rate	13,340
Illinois	5,000 2011 15,000 2012 15,000 2013 15,000 2014 established by agency by 2015	No current data available
Iowa	50 % 2009 80 % 2010 90 % 2011	2,225
Maine	125 lbs/yr 2009 160 lbs/yr 2010	7,178
Montana	“Increase in the number ... collected each year until 2016 or [until] the number ... is ... declining”	277
New Hampshire	Agency sets goals	1,652
Pennsylvania	Manufacturers establish goals to ensure “an increase in the number ... collected each year until 2015 or [until] the number ... is ... declining”	9,500
Rhode Island	2,000 2011 2,250 2012 2,500 2013 2,500 2014 via regulation 2015	No current data available
Vermont	65 % 2010	3,232

Estimated Thermostat Waste Generation & Current and Proposed Collection Rates



Contractor's Record Keeping Requirements

§67388.7

(c) If a manufacturer or a group of manufacturer do not satisfy the requirements in subsection (b) then the department will post on its website the manufacturer or group of manufacturers that have failed to meet the requirements of this chapter.

Authority: Section 58012, 25150, Health and Safety Code. Reference: Section 25180, 25187, 25189.2, 25218.8.13 and 25214.8.17 Health and Safety Code.

§67388.7 Reporting Requirements

(a) Including the requirements pursuant to Health and Safety Code 25214.8.13(i), each manufacturer or group of manufacturers' annual report submitted to department shall include the following information:

- (1) Household hazardous waste collection facility, retailer or wholesaler bin identification number,
- (2) Household hazardous waste collection facility, retailer or wholesaler name and site address of the bins collected,
- (3) Contact person's name, mailing address, telephone number,
- (4) The date that the manufacturer or group of manufacturers receives the bins from the household hazardous waste collection facility, retailer or wholesaler, and
- (5) The number of mercury thermostats collected during the previous calendar year listed by each brand name.

(b) Beginning January 1, 2013, each HVAC and demolition contractor shall submit, to the department, an annual report for the period beginning January 1 and ending December 31 of each calendar year for the previous year.

(c) Annual reports shall be submitted in an electronic format provided by the department within 30 days of the end of each reporting period. Each annual report shall include the following:

- (1) The business location's name and mailing address;
- (2) Contractors State Licensing Board Identification Number;
- (3) Name, address and telephone number of the person who should be contacted regarding the business' out-of-service mercury-added thermostat removal activities;
- (4) The number of contractors that work from that business location;
- (5) The number of mercury-added thermostats removed by the contractors and technicians that work from that business location;
- (6) The business location's service area; and
- (7) Names and addresses of the wholesaler, retailer or household hazardous waste collection facility where the business location takes the out-of-service mercury-added thermostats to be collected.

(d)(1) Notwithstanding the exemption provided for by 22CCR66273.8, an HVAC or demolition contractor's business location shall

“(2) ...HVAC and demolition contractors shall keep written records on site of the following information:

- (A) The date when each out-of-service mercury-added thermostat was removed,
- (B) The location where each out-of-service mercury-added thermostat was removed,
- (C) The date when each out-of-service mercury-added thermostat was disposed, and
- (D) The location where each out-of-service mercury-added thermostat was disposed. ”

ten records on site

214.8.16 and

Reaching Best-in-Class Performance Annual Collection

