

Connecticut Extended Producer Responsibility Program Evaluation: Summary and Recommendations

January 2017

29 Stanhope Street
Boston, MA 02116
617.236.4855

www.productstewardship.us

Prepared by the Product Stewardship Institute, Inc.

The Product Stewardship Institute

The Product Stewardship Institute (PSI) is a national, membership-based nonprofit committed to reducing the health, safety, and environmental impacts of consumer products across their lifecycle with a strong focus on sustainable end-of-life management. Headquartered in Boston, Mass., PSI takes a unique product stewardship approach to solving waste management problems by encouraging product design changes and mediating stakeholder dialogues. With 47 state environmental agency members, along with hundreds of local government members from coast-to-coast, and 110 corporate, business, academic, non-U.S. government, and organizational partners, we work to design, implement, evaluate, strengthen, and promote both legislative and voluntary product stewardship initiatives across North America

Acknowledgements

PSI prepared this report for the Connecticut Department of Energy and Environmental Protection (CT DEEP). We would like to thank CT DEEP's Tom Metzner and Sherill Baldwin for their leadership in initiating this research and providing input on the development of the report. We would also like to thank PaintCare, the Mattress Recycling Council, the Thermostat Recycling Corporation, and Connecticut's Covered Electronics Recyclers for providing data and input for this report. PSI's Scott Cassel was the project manager, and Sydney Hausman-Cohen and Resa Dimino are the primary researchers.

Project Contact

For more information, please contact Scott Cassel, PSI Chief Executive Officer and Founder, at scott@productstewardship.us, or (617) 236-4822.

TABLE OF CONTENTS

I.	Executive Summary	1
II.	Electronics	1
III.	Mercury Thermostats	4
IV.	Paint	6
V.	Mattresses	8
VI.	Recommendations	10
VII.	Appendix A: Summary Chart - Electronics	12
VIII.	Appendix B: Summary Chart – Mercury Thermostats.....	14
IX.	Appendix C: Summary Chart – Paint.....	16
X.	Appendix D: Summary Chart – Mattresses	19

I. EXECUTIVE SUMMARY

This report summarizes a multi-faceted evaluation of four extended producer responsibility (EPR) programs in Connecticut performed by PSI for the Connecticut Department of Energy and Environmental Protection (DEEP) in 2015. The data are drawn primarily from surveys of municipal programs and producer responsibility organizations, supplemented by PSI research. The analysis includes as complete a data set as was available through 2014 for programs targeting electronics, mercury thermostats, paint, and mattresses; performance data for 2015 have been provided where possible. Key data for each product category are provided in the report Appendices.

PSI's evaluation covered several key indicators of program performance including:

- quantity of product collected,
- how collected materials were managed,
- environmental impacts and benefits,
- consumer convenience,
- program costs and financial benefits,
- job creation, and
- comparison to other states with similar programs.

This report demonstrates the significant economic and environmental gains that EPR programs have achieved in the State of Connecticut. The four EPR programs diverted more than 26 million pounds of materials from waste, yielded a cumulative cost savings of more than \$2.6 million per year to Connecticut municipalities, and provided services worth another \$6.7 million. They led to the creation of more than 100 jobs and reduced greenhouse gas (GHG) emissions by more than 13 million kg of carbon equivalent. Furthermore, nearly all Connecticut residents now have convenient access to recycling collection sites for the target products.

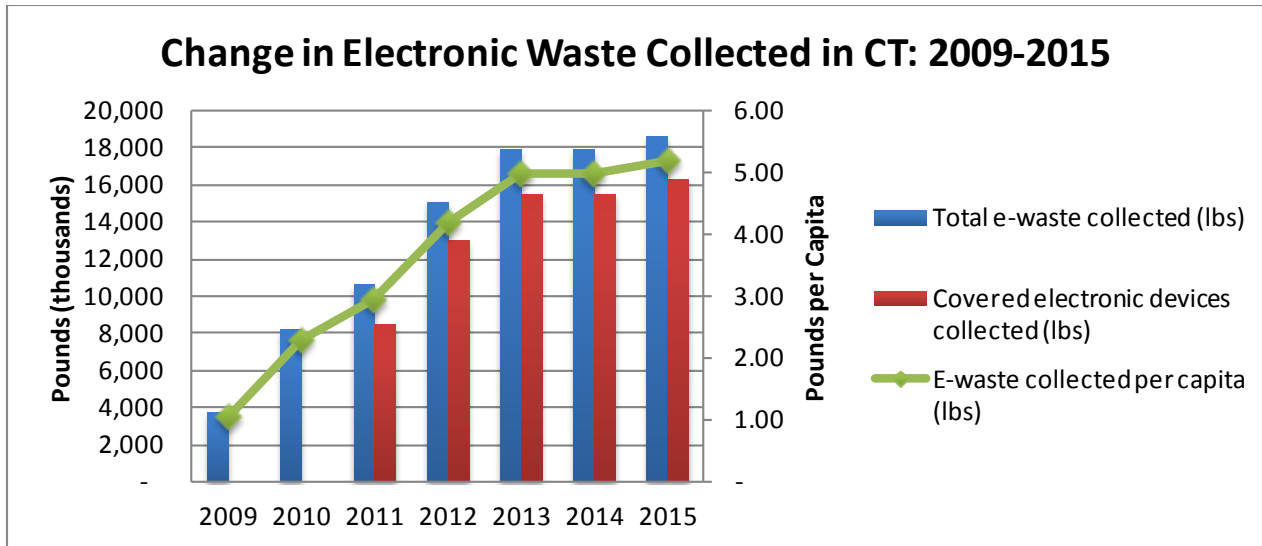
II. ELECTRONICS

The following section summarizes PSI's findings regarding the Connecticut electronics stewardship program, which began in 2011.

Collections

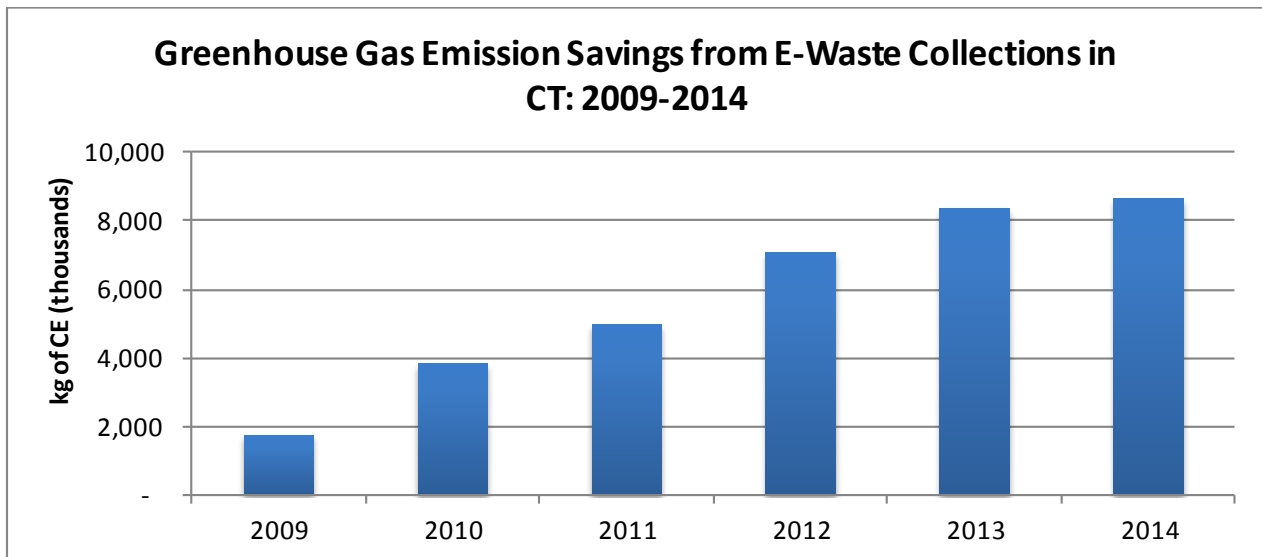
- **Total e-scrap recovery** in Connecticut has **increased steadily** from 3.7 million pounds in 2009 to 18.6 million pounds in 2015.
- Recovery of e-scrap overall, as well as covered electronic devices (CEDs),¹ as a subset of e-scrap, have increased each year on both a gross and per-capita basis.

¹ Covered Electronic Devices (CEDs) include televisions, computers (including laptops), printers and monitors.



Environmental Impacts

- In 2014, e-scrap recycling resulted in **greenhouse gas emission savings of 8.66 million kg of carbon equivalent**, comparable to the annual emissions from 1,823 passenger vehicles (see graph below).
- E-scrap recycling **diverted 333 tons of lead** from disposal in 2014.



Convenience

- **The number of permanent collection sites for e-scrap increased** steadily from 86 in 2009 to 273 in 2014.
- In 2014, 155 of 169 towns in Connecticut had access to at least one permanent collection site.
- Data from a 2014 survey conducted by the Electronics Recycling Coordination Clearinghouse (ERCC) regarding public awareness indicate that a greater percentage of residents used town or regional recycling programs to manage e-scrap than retail drop-off sites. One third of

respondents were unaware of how to recycle e-scrap, while another third were uncertain. Additionally, 75 percent of respondents did not know that it is illegal to dispose of CEDs in the trash in Connecticut.

- **Covered electronics recyclers (CERs) collected more than 90 percent of the e-scrap recovered** in each of the four years studied; original equipment manufacturer (OEM) **private programs (e.g., Best Buy, Goodwill, Staples) recovered less than 10 percent annually.**

Program Costs & Financial Benefits

- In 2014, the electronics stewardship program **reduced municipal disposal costs by approximately \$528,835**, which does not account for the avoided recycling costs for material that was recovered.
- In 2014, the electronics stewardship program provided **financial benefits** (i.e., no cost recycling services) **worth \$4.4 million** to Connecticut municipalities and residents by responsibly recycling 18.5 million pounds of e-scrap.
- Total direct costs to manufacturers increased each year in line with the increase in quantity of e-scrap collected, while the **per pound cost to manufacturers has remained stable since the program's inception at approximately \$0.30 per pound.**
- The **cost per pound of e-scrap recycling through the electronics recycling program is higher than the estimated cost to municipalities for recycling** prior to program implementation. There are many variables that may have affected this increase, including the increasing cost of managing cathode ray tubes (CRTs); administrative costs related to program management; discounted prices offered to municipalities by recyclers between the passage and implementation of the electronics recycling law; payment to municipalities from CERs for recovery; and an increase in responsible materials management due to regulations.

Job Creation

- The electronics stewardship program in Connecticut resulted in the **development of 80 recycling-sector jobs** through the middle of 2016, 68 of which are based in Connecticut.
- The per job cost to manufacturers in 2014 was approximately \$55,500.

Cross-State Comparison

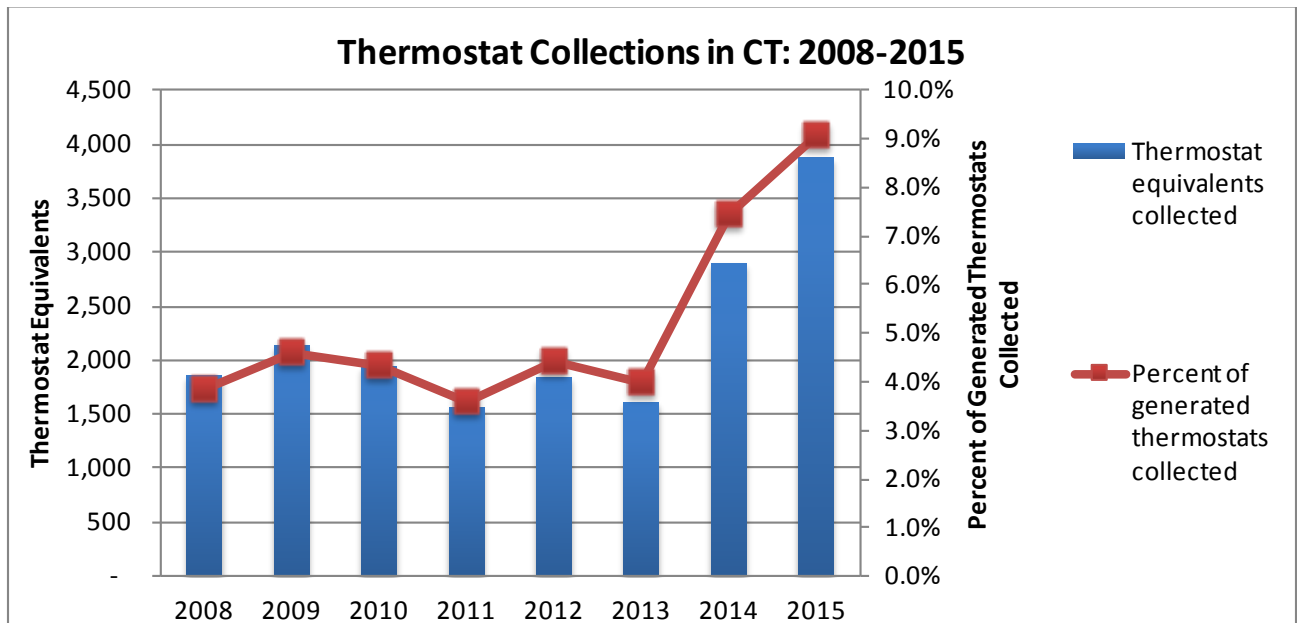
- Nationally, in 2014, Connecticut ranked 11th of 25 states with electronics stewardship legislation. On a per capita basis, Connecticut collected significantly less e-scrap than Vermont or Maine, although those two states include more e-scrap generators, such as small businesses, non-profit organizations, and schools within the scope of their electronics stewardship legislation. The fact that Connecticut had a strong history of e-scrap collection prior to implementation of the EPR program may also have played a role in lower program collections, as there may have been less pent up demand for e-scrap recycling. More research is necessary to determine the relationship between legislative differences and collection rates.

III. MERCURY THERMOSTATS

The following section summarizes PSI’s findings regarding the Connecticut mercury thermostat stewardship program, which began in 2013.

Collections

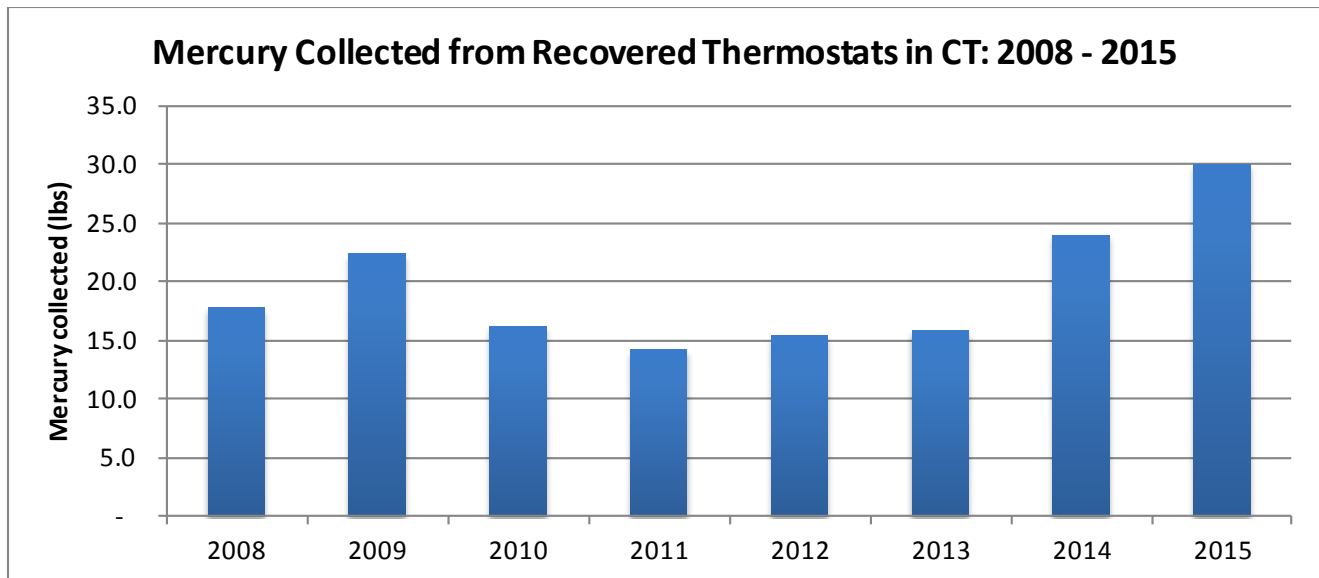
- From 2008 to 2013, prior to implementation of Connecticut’s thermostat EPR law, **annual thermostat recovery** in Connecticut ranged from 1,551 to 2,123 thermostat equivalents² (4.32 to 5.96 per 10,000 residents), with **no clear positive or negative trend**, even when adjusted for decreasing supply.
- **In 2014 and 2015, thermostat collection rose significantly** to 2,866 thermostat equivalents or 8.02 per 10,000 residents in 2014 and 3,865 or 10.75 per 10,000 residents in 2015. This increase directly follows the implementation of Connecticut’s mercury thermostat EPR law in 2013.



Environmental Impacts

- Between 2008 and 2013, prior to implementation of the EPR law, Connecticut’s mercury thermostat stewardship program recovered **101.8 pounds of mercury**, an average of nearly **17 pounds per year**.
- In 2014 and 2015, the program recovered 54 pounds of mercury or an average of 27 pounds per year.

²“Thermostat equivalents” accounts for both intact thermostats and loose mercury switches collected from thermostats. According to the Thermostat Recycling Corporation (TRC), mercury thermostats contain an average of 1.4 mercury switches.



Convenience

- In 2014, the collection infrastructure for mercury thermostats consisted of **121 wholesale, retail, contractor, and municipal sites** throughout the state. **Wholesale collection sites were most prevalent**, comprising 70 percent of the collection infrastructure in the state.
- Between 2013 and 2014, TRC **added 51 new collection sites** in Connecticut, including 39 new wholesale sites and 12 new contractor sites.

Program Costs & Financial Benefits

- TRC spent approximately **\$18,500 to manage Connecticut’s mercury thermostats** in 2014. Administration / reporting accounted for 47 percent of these costs, and transportation / processing and outreach / education each comprised an additional 25 percent.
- In 2014, the mercury thermostat stewardship program provided **financial benefits worth \$9,258** to Connecticut municipalities and residents by providing for the responsible management of spent mercury thermostats and conducting public outreach/education.
- The program **cost per thermostat increased each year** from \$4.64 in 2012 to \$6.40 in 2014.

Job Creation

- Nationally, TRC added **one additional full-time employee** in 2013 and **three full-time employees** in 2014.

Cross-State Comparison

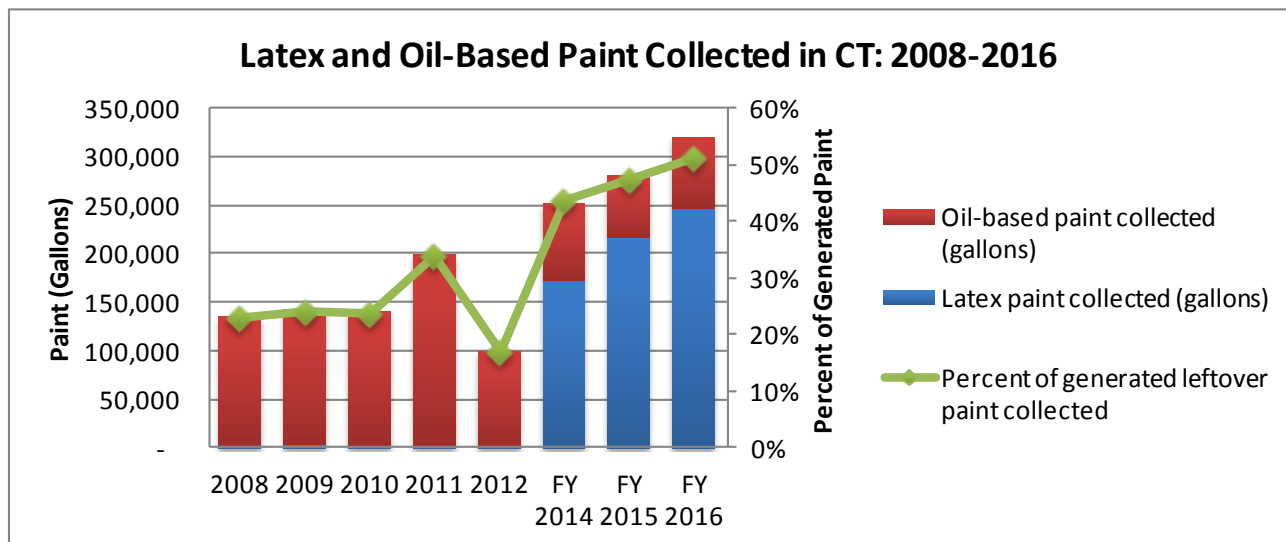
- Nationally, in 2014, Connecticut ranked 9th among the 13 states with thermostat EPR programs. On a per capita basis, **Connecticut collected significantly fewer thermostats than Maine, New Hampshire, Vermont, and Rhode Island** from 2011 through 2014. All five of these states have EPR laws for mercury thermostats; however only Maine and Vermont, the two highest achieving states in the country, provide a \$5 bounty for thermostat return.

IV. PAINT

The following section summarizes PSI's findings regarding the Connecticut paint stewardship program, which began in 2013.

Collections

- **Total paint recovery** in Connecticut **increased significantly** following implementation of the paint stewardship program from 149,000 gallons in 2010, virtually all oil-based (pre-implementation), to 320,000 gallons in FY2016 (year three of the program).³
- In FY2016, PaintCare's collection volumes in Connecticut were equal to **51 percent of the leftover paint generated** in that year.
- In FY2015, **82 percent of the latex paint** collected by PaintCare in Connecticut was **recycled back into paint or reused**. Since not all latex paint is suitable for reuse or recycling, this represented about 62 percent of generated viable latex paint waste (i.e., leftover latex paint that was not dry or hardened). Latex paint that was not reused or recycled was used as **landfill cover product (6 percent)** or **disposed (12 percent)**, while oil-based paint was blended for use as a **fuel substitute**.



Environmental Impacts

- In 2014, latex paint recycling resulted in **GHG emission savings of 188,619 kg of carbon equivalent**, comparable to the annual emissions from 40 passenger vehicles.
- Latex paint recycling in Connecticut in 2014 also saved 4.4 million gallons of water and 8.7 million megajoules (MJ) of fuel energy.

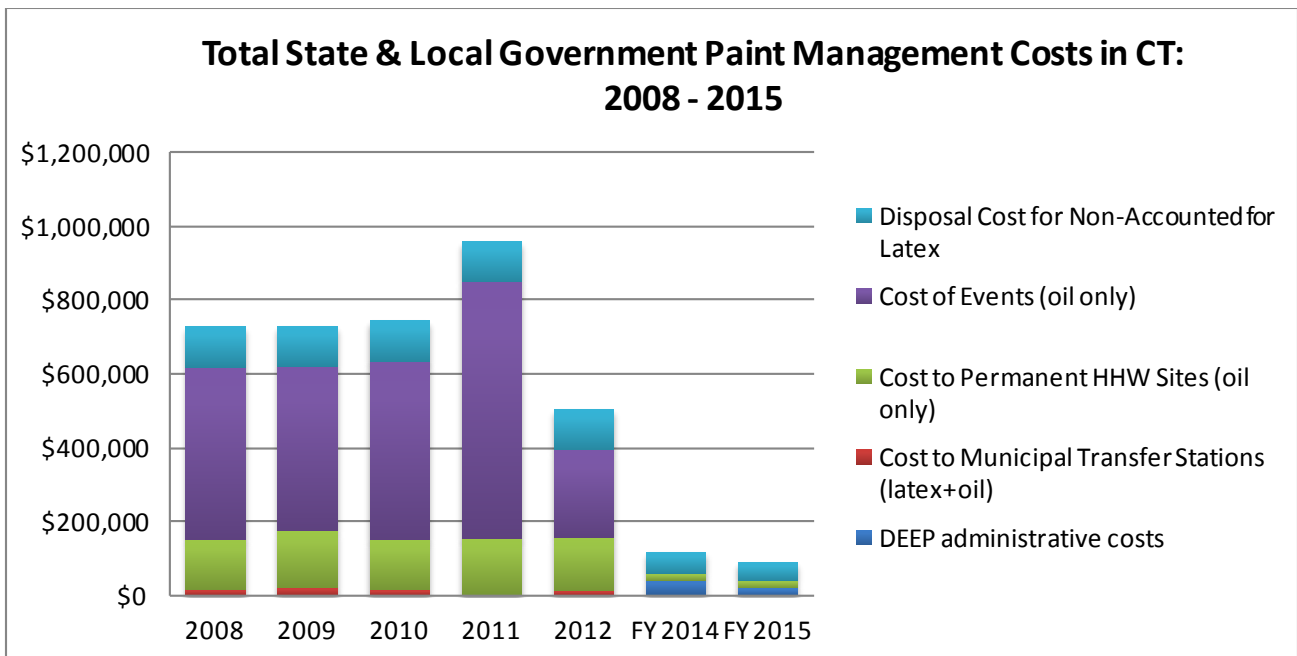
³ Data collected for 2008-2012 reflects a calendar year. PaintCare began operation on July 1, 2013 and operates on a July 1 - June 30 fiscal year. Post-2012 figures reflect PaintCare program-reported data.

Convenience

- **The number of permanent collection sites for paint increased** from 8 locations in 2011 (pre-implementation) to 140 locations in FY2015 (year two of the program). The number of collection events decreased in conjunction with the addition of permanent collection sites.
- **The number of towns with at least one collection site or event increased** from 75 in 2011 (pre-implementation) to 108 in FY2015 (year two of the program). In 2013 and 2014, **99.9 percent** of the Connecticut population **lived within 15 miles** of a PaintCare collection site.

Program Costs & Financial Benefits

- Following implementation of the PaintCare program, **paint transportation and processing costs borne by municipal programs decreased by approximately \$623,000 annually** from an average of \$691,000 per year to \$67,000 per year (see graph below).
- In 2014, the paint stewardship program provided **financial benefits worth \$2.3 million** to Connecticut municipalities and residents by responsibly managing leftover paint and providing public outreach/education.
- PaintCare spent approximately **\$2.7 million to manage Connecticut’s leftover paint** in 2014. Collection, transportation, and processing accounted for 74 percent of these costs. Administration and outreach/education each comprised an additional 13 percent. This equates to \$9.77 per gallon of paint recovered in 2014.



Job Creation

- The paint stewardship program in Connecticut has resulted in the **development of 21 recycling-sector jobs**. Processors project that **an additional 18 jobs** will be created by the end of 2015. Two of these jobs are based in Connecticut.

Cross-State Comparison

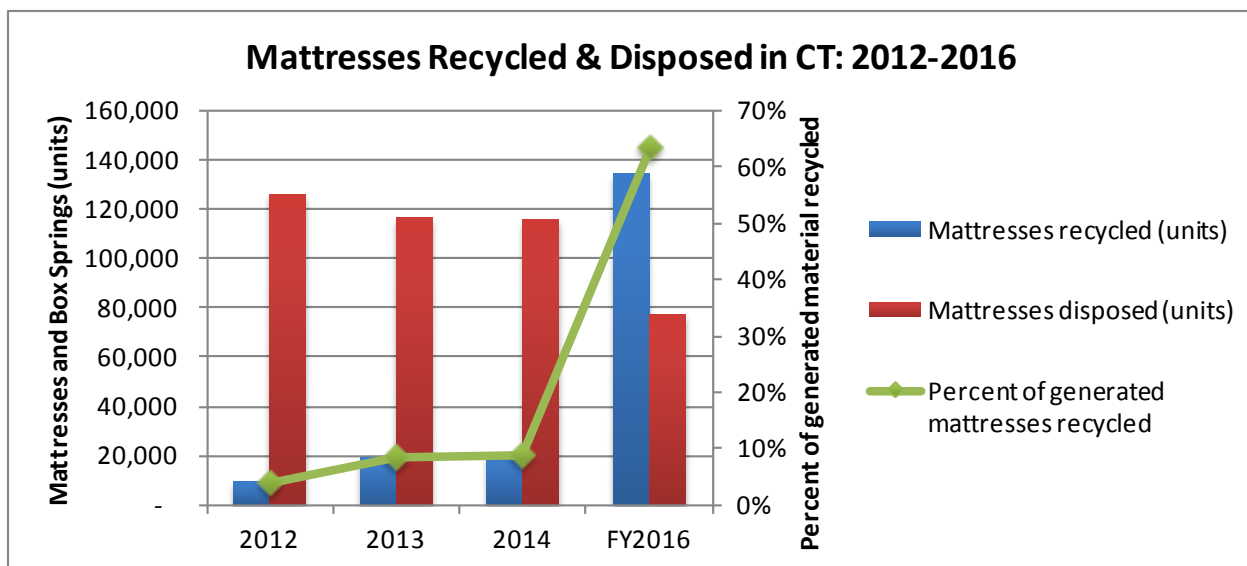
- On a per capita basis, **Connecticut collected more paint than California and Rhode Island, and less paint than Oregon and Vermont**. The laws for all five states are very similar; therefore, differences in recovery are likely to be related to pre-program collection infrastructure and geographic influences.

V. MATTRESSES

The following section summarizes PSI’s findings regarding the Connecticut mattress stewardship program, which began in 2015.

Collections

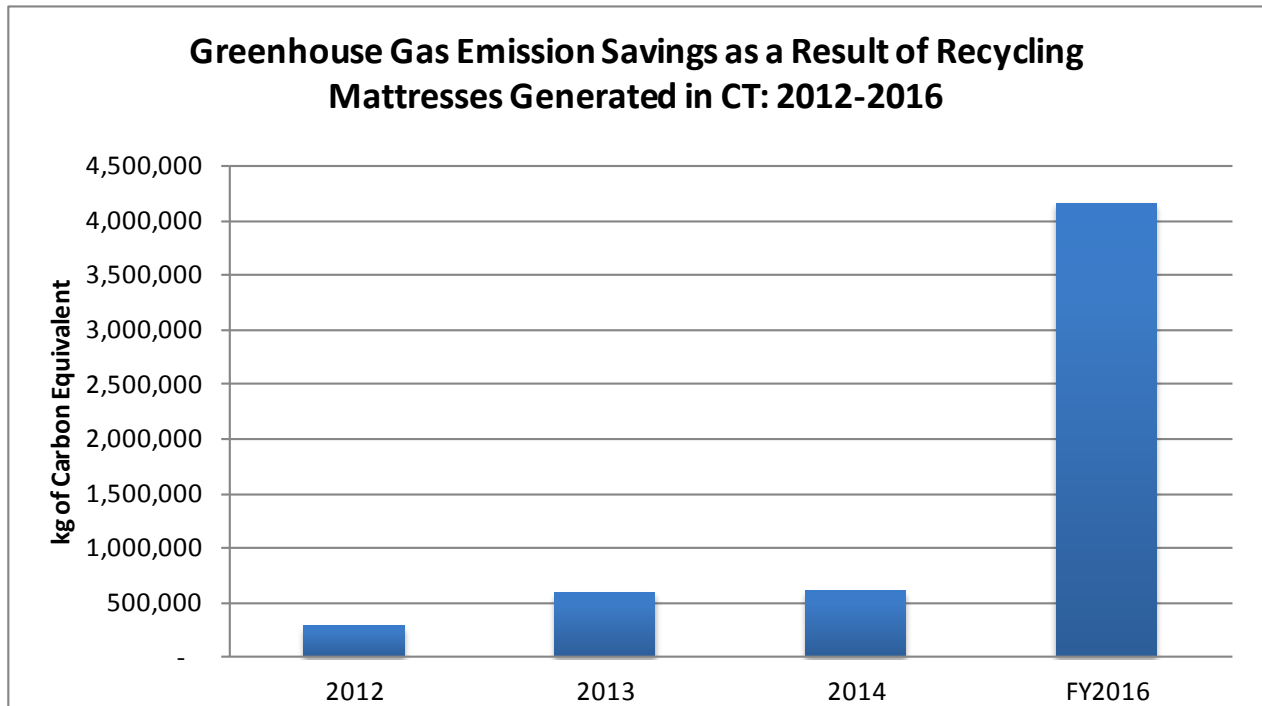
- In 2014, the year prior to implementation of the mattress stewardship program, approximately **8.7 percent of discarded mattresses were recycled**.
- The Mattress Recycling Council’s (MRC’s) FY2016⁴ recycling of more than 130,000 units equates to **63.5 percent recycling rate for discarded mattresses**.
- The number of mattresses disposed **decreased from about 115,000 in 2014 to 77,000 in FY2016**.



⁴ Data collected for 2012-2014 reflects a calendar year. The Mattress Recycling Council (MRC) began operation on May 1, 2015 and operates on a July 1 - June 30 fiscal year. FY2016 figures reflect MRC program-reported data.

Environmental Impacts

- MRC’s mattress recycling rate for FY2016 resulted in **GHG emission savings of 4.2 million kg of carbon equivalent**, comparable to the annual emissions from 875 passenger vehicles (see graph below).
- Mattress recycling in FY2016 also saved 48.7 million megajoules (MJ) of fuel energy.



Convenience

- Prior to MRC program implementation, there were 158 sites where mattresses were collected separately from waste; only 30 of which recycled at least some of the collected mattresses (not including curbside programs).
- In their Connecticut program plan, MRC projected the addition of **49 new non-retail collection locations** for mattresses in the first two years of the program, including **healthcare facilities, educational facilities, and prisons**. MRC did not provide a projection for the number of new retail and lodging establishment collection sites to be added through the program. This data will become available upon release of the first annual report.
- Under the MRC program, the **number of sites collecting mattresses for recycling is projected to increase from 30 to 134 locations**.

Program Costs & Cost Savings

- **Municipalities saved nearly \$1.5 million** in mattress disposal costs in FY2016 as a result of the MRC program.
- MRC program costs are yet to be determined.

VI. RECOMMENDATIONS

Based on the results of this multi-program evaluation, PSI recommends the following actions to increase the effectiveness of stewardship programs in Connecticut:

- **Evaluate stewardship program reporting requirements to ensure that critical data are obtained.** For example, current CER reports do not require electronics recyclers to distinguish between flat panel and CRT TVs and monitors. These data are critical to determining the environmental and economic impacts of the stewardship program. Similarly, while TRC provides a lengthy list of collection sites for the state on its website and in public education materials, it does not highlight key convenience metrics, such as total number of collection sites in the state, within the body of the report.
- **Encourage greater municipal reporting for all products.** Municipal data on recovery rates and recycling/disposal costs prior to implementation of product stewardship programs were limited for all four product categories. Even when PSI reached out directly to municipalities, few were able to supply the requested information. Encouraging or requiring annual reporting and recordkeeping from municipalities on costs and collection volumes by product, including products that do not yet have stewardship legislation, would provide a valuable source of baseline information for assessing the impact of future product stewardship programs and identifying opportunities to improve their performance. Using a simple, unified recordkeeping and reporting format would help streamline the process of comparing and compiling municipal data.
- **Require stewardship programs to conduct education and outreach.** Under Connecticut's electronics stewardship law, manufacturers are not required to conduct any outreach or education about electronics recycling. Unfortunately, this has translated into limited public awareness: in ERCC's 2014 survey, only 36 percent of residents knew for certain what to do with their e-scrap, and 68 percent did not know whether it was legal or illegal to dispose of e-scrap in the trash. Requiring product stewardship programs to conduct outreach to residents can increase collection rates and, for many products, reduce the risk of illegal dumping.
- **Determine factors contributing to the high performance of EPR programs in other states.** Despite legislative similarities, Rhode Island and New Hampshire outperformed Connecticut in per capita thermostat recovery, while Oregon and Vermont each collected a greater volume of paint per capita. Evaluating successful elements of these higher-performing programs may illuminate opportunities for Connecticut to improve its collection rates as its stewardship programs mature.

- **Consider expanding entities covered by stewardship legislation.** In the past several years, per capita e-scrap recovery in Maine, Washington, and Vermont has surpassed recovery in Connecticut. Legislation in these three states requires manufacturer programs to collect e-scrap from schools, small businesses, and nonprofit organizations among “covered entities,” and Washington State covers small governments as well. By contrast, Connecticut’s law only covers e-scrap collected from households. Connecticut may consider adding schools, non-profits, and small businesses to their electronics legislation in order to increase e-scrap recovery and recycling. Effective EPR legislation for any product should take into account the wide range of generators and consider opportunities to include them in the program.
- **Evaluate extent to which electronics recovery rates are lower in more mature programs due to product lightweighting.** It is possible that early in its implementation an electronics stewardship program is more likely to collect older, heavier products due to stockpiling prior to program implementation. Evaluating the total weight of products collected in various states in comparison with the number of years since program implementation would help identify whether this variable should be accounted for when determining program achievements.

VII. APPENDIX A: SUMMARY CHART – ELECTRONICS

	2009	2010	2011	2012	2013	2014
<i>Collection Quantities</i>						
E-scrap collected (lbs)	3,735,621	8,193,167	10,637,423	15,063,608	17,887,942	18,555,622
E-scrap collected per capita (lbs)	1.05	2.29	2.96	4.19	4.97	5.16
Percent of generated CT household e-scrap collected	11%	23%	29%	42%	52%	57%
CEDs Collected (lbs)			8,487,661	12,986,296	15,497,282	16,151,660
CEDs Collected per capita (lbs)			2.36	3.61	4.31	4.49
<i>CER Materials Management</i>						
Disposed (lbs)			231,713	367,589	220,176	707,392
Recycled (lbs)			6,836,581	12,262,032	13,220,415	14,697,109
Reused (lbs)			38,972	56,553	33,686	-
% Recycled			72%	89%	82%	86%
<i>Environmental Impacts</i>						
CRTs recycled (lbs)			6,510,717	9,984,769	11,325,605	11,626,891
Lead diverted (tons)			186	286	324	333
Greenhouse gas emission savings (kg of CE)	1,743,214	3,823,312	4,975,619	7,078,046	8,347,343	8,658,914
GHG emission savings equivalent (vehicles off the road)			1,047	1,490	1,757	1,823
<i>Collection Convenience</i>						
Total permanent collection sites (#)	86	201	244	240	269	273
Municipal sites (#)	86	106	136	125	150	153
Retail sites (#)		95	107	114	114	114
Other approved sites (#)			1	1	5	6
One-day events (#)	5	36	66	55	19	7
<i>OEM/CER Collection Comparison</i>						
Average material per OEM site (lbs)			8,836	12,327	16,275	13,383
Average material per CER site (lbs)			70,745	103,343	99,670	103,155
OEM material per capita (lbs)			0.26	0.37	0.48	0.40
CER material per capita (lbs)			2.70	3.82	4.49	4.76
<i>Program Costs</i>						

	2009	2010	2011	2012	2013	2014
CER costs			\$2,157,447	\$3,526,566	\$4,254,639	\$4,440,278
CER cost per pound			\$0.29	\$0.30	\$0.31	\$0.30
Costs to municipalities	\$173,346	\$475,868				
DEEP administrative costs			\$276,694	\$370,567	\$403,684	\$409,705
<i>Job Creation</i>						
Jobs created since EPR implementation: CT					37	41
Jobs created since EPR implementation: Total					69	78
Manufacturer direct cost/job					\$61,661.43	\$55,503.47
<i>Cost Savings</i>						
Avoided municipal disposal costs			\$303,167	\$429,313	\$509,806	\$528,835
<i>Cross-State Comparison</i>						
CT: Total e-scrap collected (lbs)	7,912,292	6,520,464	8,091,481	9,554,054	11,698,254	-
CT: e-scrap collected per capita (lbs)	7,912,292.00	6,520,464.00	8,091,481.00	9,554,054.00	11,698,254.00	-
ME: Total e-scrap collected (lbs)	7,912,292	6,520,464	8,091,481	9,554,054	11,698,254	
ME: e-scrap collected per capita (lbs)	5.99	4.93	6.12	6.57	8.81	
VT: Total e-scrap collected (lbs)	1,753,000	1,626,000	5,440,000	5,398,131		
VT: e-scrap collected per capita (lbs)	2.81	2.60	8.68	8.62		

VIII. APPENDIX B: SUMMARY CHART – MERCURY THERMOSTATS

	2008	2009	2010	2011	2012	2013	2014
<i>Collection Quantities</i>							
Thermostat equivalents collected	1,852	2,123	1,933	1,551	1,835	1,603	2,886
Thermostats collected	1,838	2,109	1,918	1,538	1,831	1,600	2,485
Switches collected	19	20	21	18	5	5	27
Bins returned	19	20	21	18	19	18	45
Percent of generated thermostats collected	3.85%	4.58%	4.32%	3.59%	4.40%	3.98%	7.43%
Thermostats collected per 10,000 residents	5.22	5.96	5.40	4.32	5.10	4.45	8.02
<i>Environmental Impact</i>							
Mercury collected (lbs)	17.8	22.4	16.2	14.2	15.4	15.85	23.99
<i>Collection Convenience</i>							
Wholesale sites						48	87
Retailer sites						1	1
Contractor sites						13	25
HHW collection sites						8	8
Total sites						70	121
<i>Program Costs</i>							
CT DEEP admin costs					\$5,000	\$5,000	\$5,000
TRC total expenses					\$8,493	\$8,527	\$18,463
TRC administration/reporting expenses					\$2,510	\$3,704	\$8,677
TRC transportation & recycling expenses					\$3,095	\$2,615	\$4,654
TRC outreach/education expenses					\$2,001	\$1,799	\$4,406
TRC legal expenses					\$611	\$228	\$528
TRC container expenses					\$254	\$180	\$198
TRC expenses per thermostat equivalent					\$ 4.64	\$5.32	\$6.40
<i>Job Creation</i>							
Jobs created on account of EPR (in all states)						1	3
<i>Cross-State Comparison</i>							
CT thermostats per 10,000	5.2	5.9	5.4	4.3	5.1	4.4	6.9
MA thermostats per 10,000			3.4	3.8	8.7	9.8	9.1

	2008	2009	2010	2011	2012	2013	2014
ME thermostats per 10,000			49.1	49.8	50.3	31.7	32.6
NH thermostats per 10,000			12.5	15.8	18.1	13.5	14.2
RI thermostats per 10,000			4.0	10.2	15.4	23.5	25.2
VT thermostats per 10,000			53.5	57.1	48.5	33.7	34.6

IX. APPENDIX C: SUMMARY CHART – PAINT

	2008	2009	2010	2011	2012	FY 2014	FY 2015
<i>Collection Quantities</i>							
Total paint collected (gallons)	135,645	143,405	141,138	199,621	100,393	252,390	281,055
Latex paint collected (gallons)	2,850	3,899	2,701	2,947	3,265	172,877	217,322
Oil-based paint collected (gallons)	132,785	139,506	138,437	196,674	97,128	79,513	63,733
Percent of generated leftover paint collected	23%	24%	24%	34%	17%	44%	47%
<i>Materials Management</i>							
Latex: Paint -to-Paint Recycling (gallons)						139,959	178,753
Latex: Alternative Product – Landfill Cover Product (gallons)						6,949	13,200
Latex: Beneficial Use – Fuel Substitution (gallons)						10,206	0
Latex: Appropriate Disposal (gallons)						15,263	25,125
Latex: Reuse (gallons)						500	244
% Usable Latex Paint Recycled or Reused	0.0%	0.0%	0.0%	0.0%	0.0%	50%	62%
% Latex Collected Recycled						81%	82%
% Oil-based paint fuel-blended						100%	100%
<i>Environmental Impacts</i>							
Greenhouse gas emission savings (kg of CE)						146,187	188,619
GHG emission savings equivalent (passenger vehicles off the road)						31	40
Water use savings (liters)						3,491,373	4,448,452
Fossil fuel depletion savings (surplus MJ)						213,801	271,358
Total energy savings (MJ)						2,930,893	3,750,685
Total fuel energy savings (MJ)						6,848,442	8,713,293
Mineral extraction savings (surplus MJ)						4,939	6,306
<i>Collection Convenience</i>							

	2008	2009	2010	2011	2012	FY 2014	FY 2015
Total year-round permanent collection sites (#)	8	8	8	8	8	129	140
Total seasonal permanent collection sites (#)	4	4	4	4	4	6	10
Total collection events (#)	78	78	98	106	101	65	51
Total latex collection sites & events (#)	8	8	8	8	9	143	152
HHW facilities (#)	4	4	4	4	4	3	3
Retail sites (#)						100	104
Transfer stations (#)	4	4	4	4	4	25	32
Reuse Stores (#)	4	4	4	4	4	2	2
Municipal Events (#)	78	78	98	106	101	54	46
Paint Only Events (#)						11	5
Large Volume Pickups (#)						34	25
Percent of population within 15 mi of a collection site						99.9%	99.9%
Number of towns with event OR permanent site		60	66	75	63	114	108
Number of towns with permanent site	8	8	8	8	8	89	92
<i>Collection Site Comparison</i>							
Mean material per transfer station (gallons)	713	975	675	737	584		
Mean material per HHW event (gallons)		1198	1039	1384	503		
Mean material per site or event (gallons)		1667	1331	1751	921	1244	1398
<i>Program Costs</i>							
PaintCare total expenses					\$279,082	\$2,224,911	\$2,695,676
PaintCare expenses per gallon						\$9.24	\$9.77
Total government expenses (CT DEEP, transfer stations, HHW programs)	\$727,566	\$728,375	\$744,274	\$973,654	\$502,384	\$132,105	\$88,765
DEEP administrative costs						\$40,000	\$20,000
Cost to Municipal Transfer Stations (latex+oil)	\$15,115	\$20,587	\$14,261	\$15,560	\$12,339		
Cost to Permanent HHW Sites (oil only)	\$136,656	\$155,373	\$136,586	\$153,078	\$144,940	\$19,576	\$20,462

	2008	2009	2010	2011	2012	FY 2014	FY 2015
Cost of Events (oil only)	\$467,040	\$443,959	\$483,598	\$696,953	\$236,835	\$15,179	
Disposal Cost for Non-Accounted for Latex	\$108,755	\$108,456	\$109,829	\$108,063	\$108,271	\$57,350	\$48,303
<i>Job Creation</i>							
Jobs created by CT program since EPR implementation: CT						1.77	1.77
Jobs created by CT program since EPR implementation: Total						21.24	38.24
<i>Cross-State Comparison</i>							
CT paint collected per 100 residents (gallons)						6.69	7.81
CT percent of annual sales collected						4%	5%
CT latex paint recycled/reused per 100 residents (gallons)						3.90	4.98
CA paint collected per 100 residents (gallons)					2.35	5.29	
CA percent of sales collected					2%	3%	
CA latex paint recycled/reused per 100 residents (gallons)					1.67	3.21	
OR paint collected per 100 residents (gallons)			12.24	14.76	14.89		
OR percent of sales collected			6%	8%	8%		
OR latex paint recycled/reused per 100 residents (gallons)			6.98	10.63	9.53		
RI paint collected per 100 residents (gallons)							5.64
RI percent of sales collected							4%
RI latex paint recycled/reused per 100 residents (gallons)							3.06
VT paint collected per 100 residents (gallons)							15.96
VT percent of sales collected							10%
VT latex paint recycled/reused per 100 residents (gallons)							8.74

X. APPENDIX D: SUMMARY CHART – MATTRESSES

	2010	2011	2012	2013	2014	FY2016
<i>Collections & Materials Management</i>						
Mattresses recycled (units)			9,086	18,957	19,641	134,126
Mattresses recycled (pounds)			444,340	928,880	962,400	6,572,174
Mattresses disposed (units)			125,914	116,230	115,446	77,170
Percent of generated mattresses recycled			3.97%	8.33%	8.71%	63.48%
<i>Environmental Impacts</i>						
Greenhouse gas emission savings (kg of CE)			281,666	587,659	608,871	4,157,906
GHG emission savings equivalent (passenger vehicles off the road)			59	124	128	875
Energy savings (MJ NCV)			3,298,218	6,881,295	7,129,683	48,687,738
<i>Collection Convenience⁵</i>						
Total collection sites	158	158	158	158	158	207
Municipal transfer stations: total	146	146	146	146	146	146
Private transfer stations	12	12	12	12	12	12
Collection sites for recycling	30	30	30	30	30	134
Municipal collection sites: for recycling	30	30	30	30	30	78
Private transfer stations: for recycling						7
Retail collection sites						
Lodging establishments						
Prisons/Incarceration facilities						4
Health care facilities						30
Educational facilities						15
<i>Program Costs</i>						
Cost to municipalities	\$1,315,809	\$1,319,924	\$1,321,330	\$1,323,160	\$1,322,181	
CT DEEP Admin fees						
Avoided municipal disposal costs						\$1,493,879
MRC total expenses						
MRC revenue						

⁵ FY2016 Collection Convenience Metrics are projections from the MRC plan, not actual FY2016 operations