

# Sustainable Materials Management (SMM) Measurement Efforts

Measurement for the States...by the States  
With EPA facilitation & funding



"What gets measured  
gets managed."

- Lord Kelvin



# Measurement Agenda

- Re-TRAC and State Measurement Program Highlights
- Success and uses for the program
- Reports
- Next Steps

# State Data Measurement Sharing Program Overview & Benefits

Web based information sharing program on solid waste, recycling and SMM management that includes quantitative data and state programmatic (qualitative/narrative) information.

- Maintains integrity of each State's program
- Provides ability to map sources/locations of materials
- Provides states with quick access to information to respond to policy leaders and public requests
- Creates a national data collection mechanism that provides significant efficiencies, reduces duplication of efforts, and allows resources to be spent on analysis instead of data collection

# Timeline for the Measurement Program

2007

- Started in Tennessee and 8 Region 4 States

2009-2011

- State sharing template development and data input by Region 4 States

2012-2016

- 20 States fully participated in 2012 template
- 32 States plus District of Columbia participated in the 2013 Template
- 31 States participated in the 2014 preliminary results
- 2015 Template will launch Summer 2016



SDSMP  
Template

Quantitative Data:  
Recycling, Disposal, and  
SMM information

Resource  
Module

Provides Programmatic/  
Qualitative information  
for all 50 States

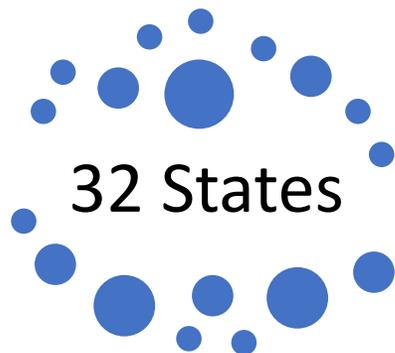
Feedback  
Form

States provide  
yearly feedback to  
the SDMS

Demographics  
Template

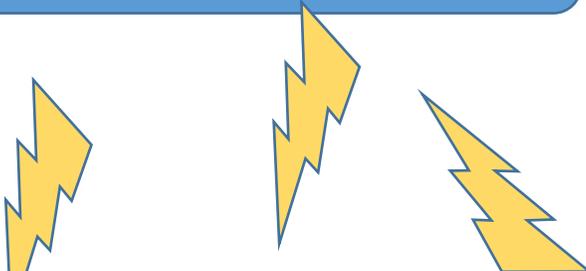


Step 1: Data Entry



Step 2: State Validation

Step 3: Regional QA/QC,  
comments back to state, call ??  
Verify data



# 2014 National Overview

- 31 states plus District of Columbia representing 227 million people (71%) population
  - Disposed 239 millions tons MSW
  - Recycled 73 million tons
  - Composted 11.6 million tons of organics

## National averages:

- 4,587 MSW pounds per household/year
- 5,262 pounds per household/yr. non-hazardous waste (MSW + C&D, etc.)

# 2014 R4 Highlights

- 8 Southeastern States representing 64 million people (20% population)
- R4 States 100% participation in the SDMSP 2009-2014
- Landfilled/Incinerated 68 million tons of MSW (8 States reporting)
- Recycled 20 million tons (7 States reporting)

# 2014 Region 4 Highlights

- In 2014, R4 States reported they recycled 20 million tons, composted 1.4 million tons of organics, created an estimated 33,600 jobs, and estimated the region's economic net benefit at **\$3.6 billion** (landfill cost avoidance + recycling revenue).
- R4 States diverted 1.4 Million tons of organic material (food/yard debris) from landfills (MS, NC, SC, TN, GA)
- Florida - 11 energy facilities incinerated 7.8 Million tons of waste energy to generate 3.5 Million MWH
- 4 States have 29 Pay as You Throw programs (GA, KY, NC, TN)
- Households serviced by Curbside Programs total 8,105,822 (NC, KY, FL)

## 2014 Region 4 Highlights

- 7 States reported average tipping fees of \$49/ton
- R4's MSW Landfill Capacity = 270 years (GA, KY, MS, NC, SC, TN)  
AL, FL (not included - no data available)
- R4 has 27 permitting FTEs (AL, GA, KY, MS, TN)
- Tennessee and North Carolina have 3 Anaerobic Digesters
- Households serviced by Curbside Programs total 8,105,822 (NC, KY, FL)
- 4 States have detailed plastics tonnage data (AL, KY, NC, SC)
- R4 has 42 C&D Landfills (MS, SC)

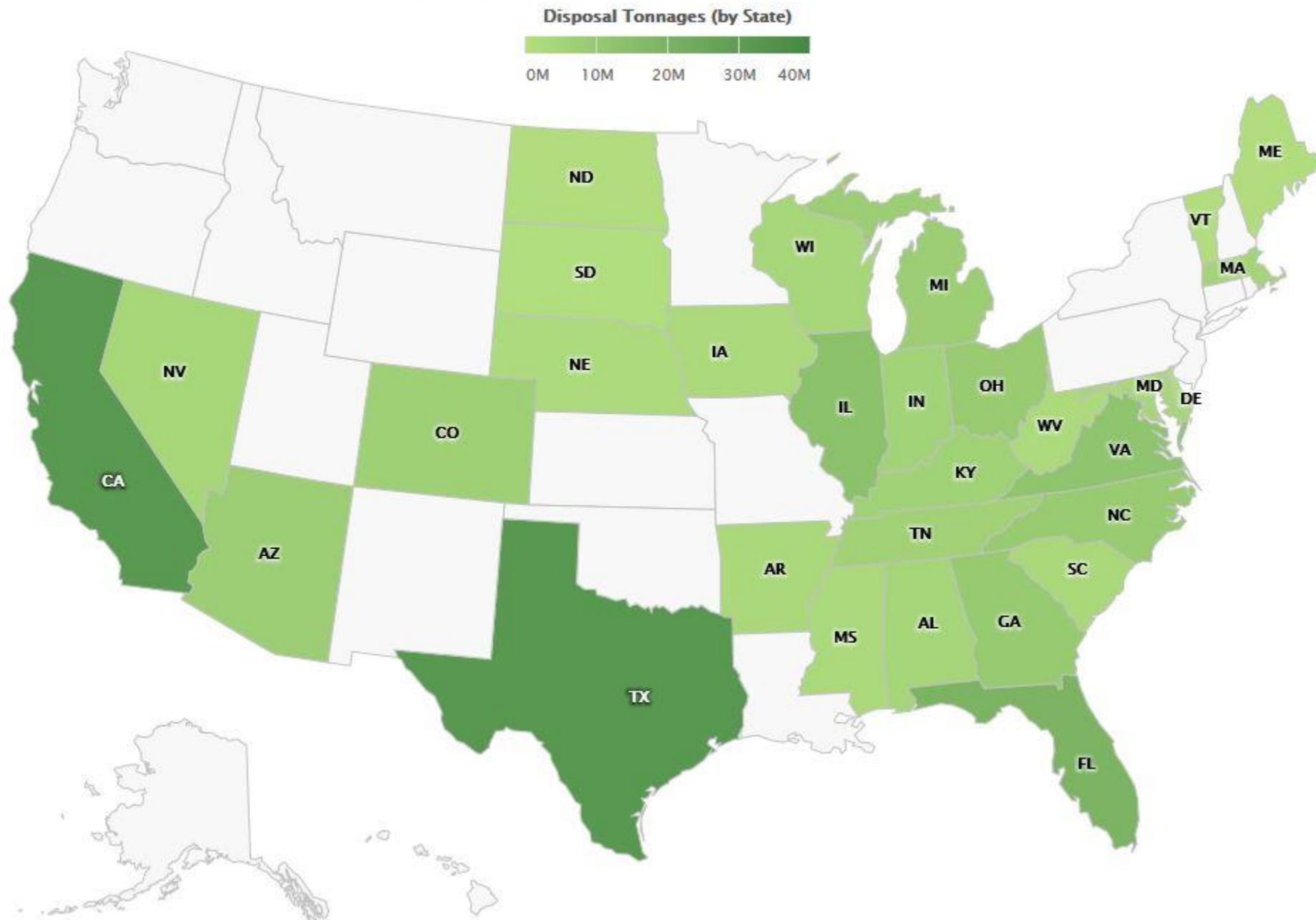
## 4. Economic Benefit of Recycling

2014

State	Recycling (Tons)	Estimated Material Value (\$100/Ton For Recyclables)	Estimated Job Creation Impact (1.68 Jobs/1000 Tons)
<b>Benefits for 2014</b>			
Nevada	1,800,002.0	\$180,000,200.00	3,024.0
North Carolina	812,778.0	\$81,277,804.00	1,365.5
North Dakota	5,071.9	\$507,186.00	8.5
Ohio	9,462,680.5	\$946,268,054.00	15,897.3
South Carolina	1,790,782.8	\$179,078,277.00	3,008.5
South Dakota	N/A	N/A	N/A
Tennessee	2,698,933.0	\$269,893,299.00	4,534.2
Texas	156,231.5	\$15,623,151.00	262.5
Vermont	160,035.0*	\$16,003,500.00	268.9
Virginia	3,008,851.0*	\$300,885,100.00	5,054.9
West Virginia	N/A	N/A	N/A
Wisconsin	857,847.0	\$85,784,700.00	1,441.2
<b>Grand Total</b>	<b>73,123,911.8</b>	<b>\$7,312,391,177.00</b>	<b>122,848.2</b>

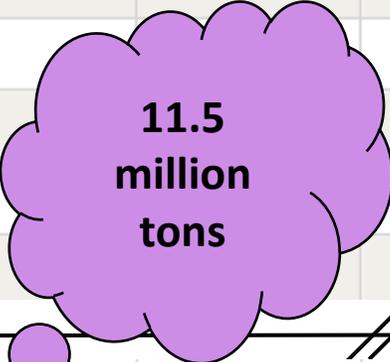
**\$11 Billion  
national – landfill  
cost + recycling  
revenue**

# State Data Measurement Sharing Program (2014)

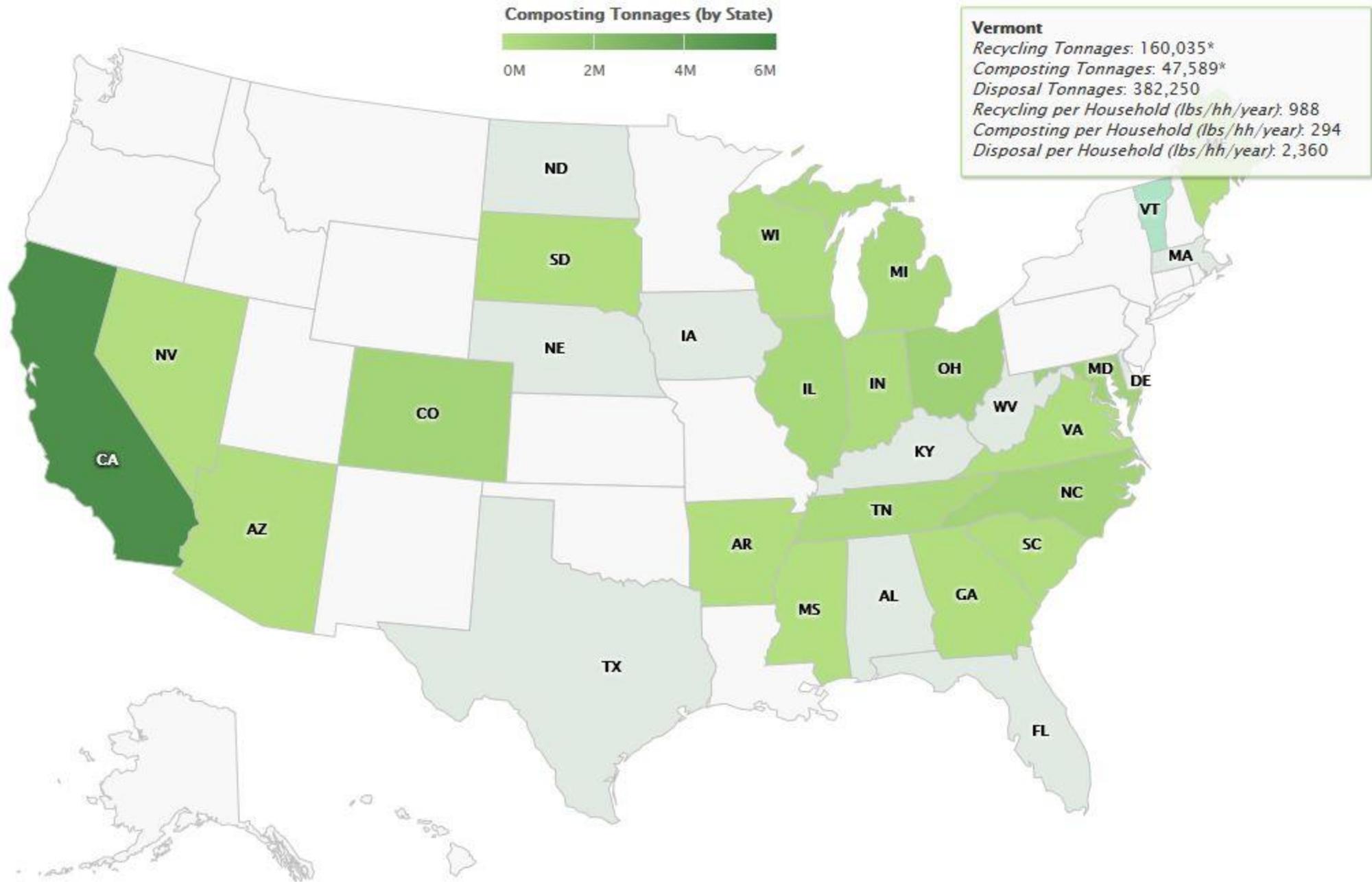


## 5b. Other Diversion Activities (Composting, Reuse, Beneficial Use)

Year: 2014, Report Type: Summary, Activity: Composting

State	TOTAL	Biosolids	Food Scraps	Food Scraps & Yard Trimmings (combined)	Other Organic Materials	Yard Trimmings
<b>Composting TONS</b>						
Alabama	No Data Available					
Arizona	116,832.0					116,832.0
Arkansas	73,556.0*					
California	5,500,000.0*					
Colorado	796,463.0			212,937.0	583,526.0	
Delaware	No Data Available					
District of Columbia	No Data Available					
Florida	No Data Available					
Georgia	39,417.0				17,335.0	13,289.0
Illinois	511,171.0*					
						
Wisconsin	224,293.0		10,347.0			213,946.0
<b>TOTAL</b>	<b>11,555,569.6</b>	<b>4,121.0</b>	<b>285,143.1</b>	<b>212,937.0</b>	<b>617,438.0</b>	<b>2,250,074.5</b>

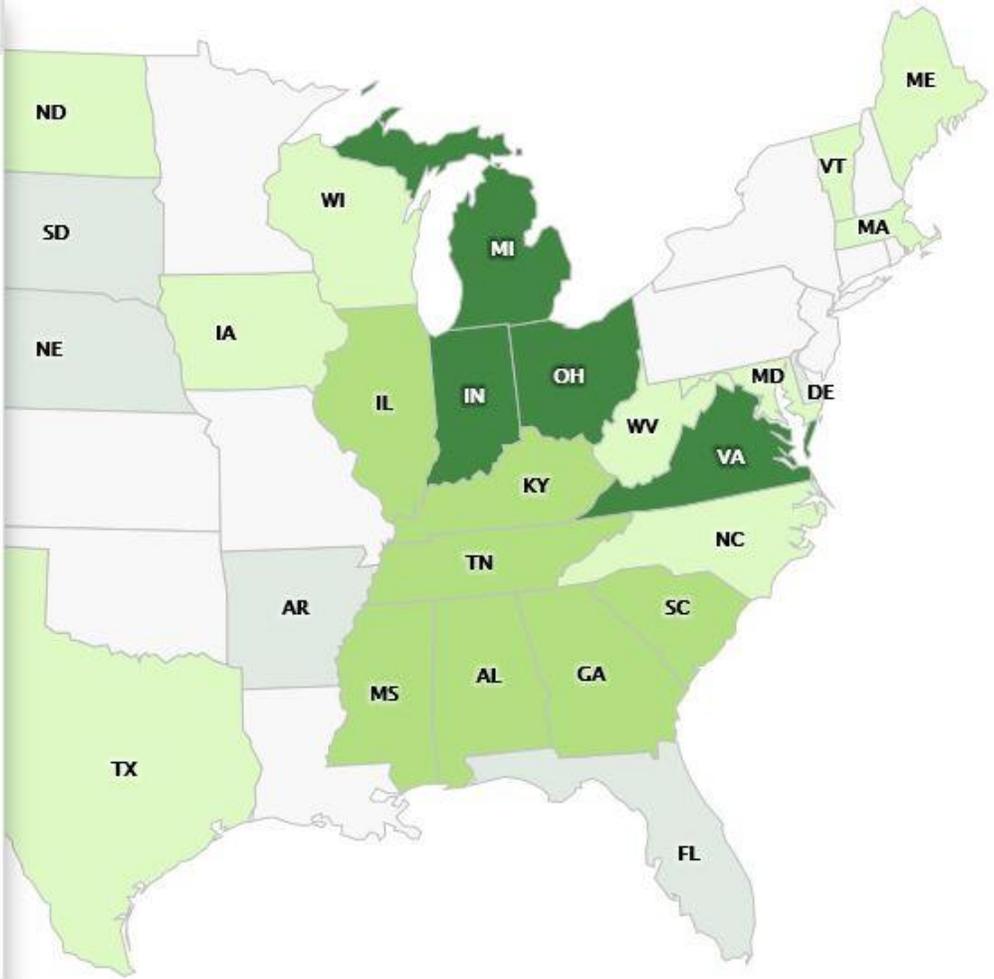
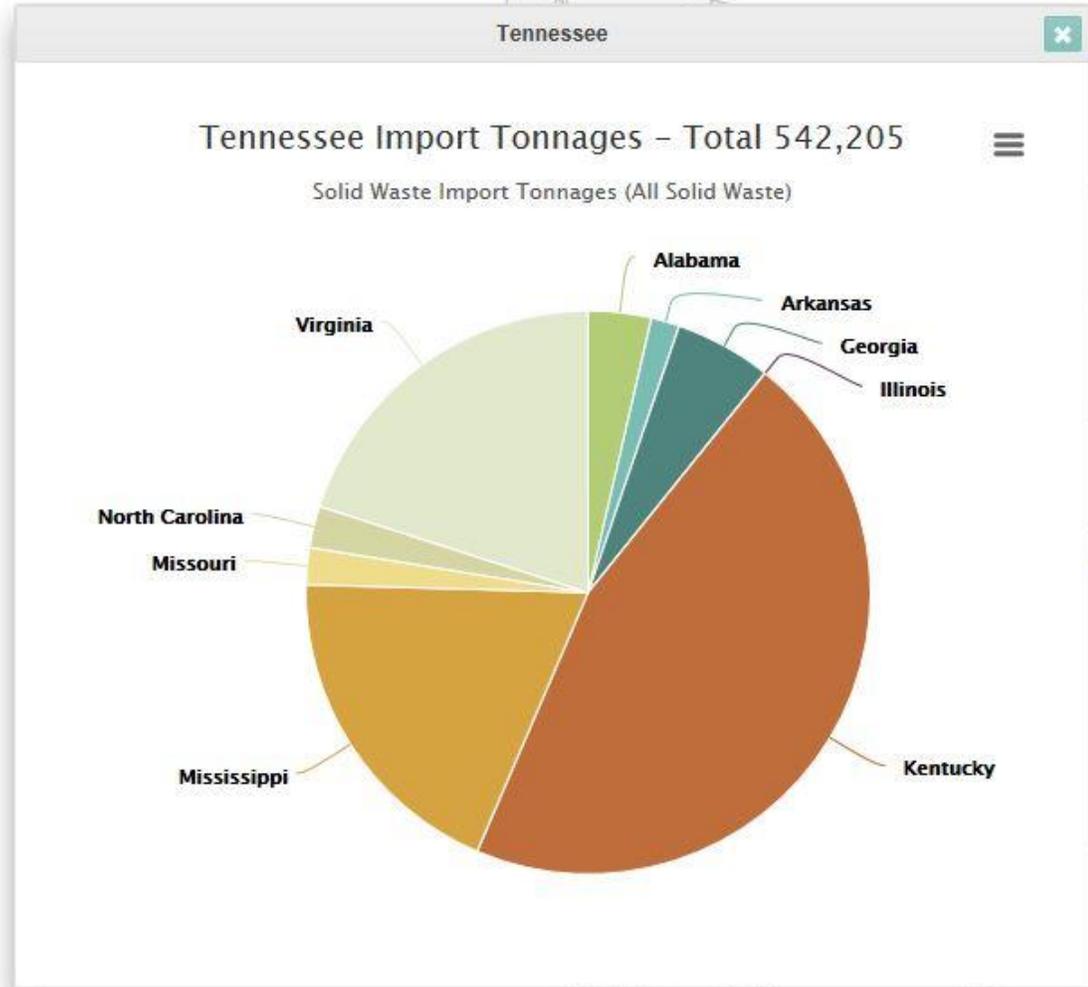
# State Data Measurement Sharing Program (2014)



# State Data Measurement Sharing Program (2014)

## Solid Waste Import Tonnes (All Solid Waste)

No Data Available
  1 to 499,999
  500,000 to 2 million
  2 million plus



## 11. Tipping Fee Gate Charges

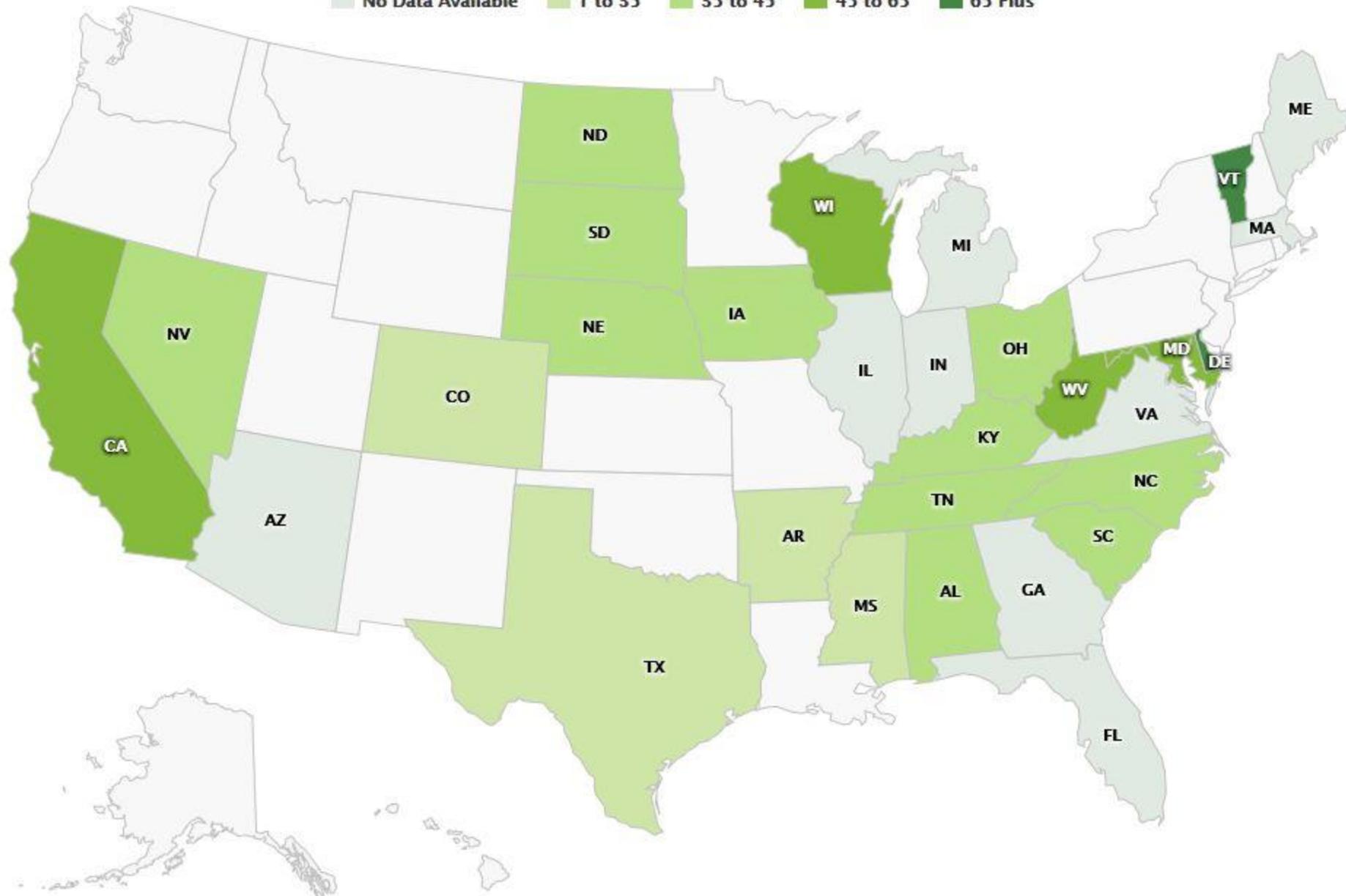
Detailed or estimated average \$/Ton tipping fee gate charges, Year: 2014

State	AVERAGE	MSW Landfills:	Construction and Demolition Landfills:	Compost/Mulch Facilities:	Incinerators/Waste Combustors:	Waste to Energy Facilities:	Tire Processing Facilities:	Transfer Stations:	Only an average MSW fee provided
Tipping fee gate charge information includes levies, taxes and/or surcharges to the average									
Alabama	\$36.00								\$36.00
Arizona	No Data Available								
Arkansas	\$35.75	\$34.25	\$37.25						
California	\$52.50	\$54.00		\$30.00		\$52.00		\$74.00	
Colorado	\$30.47	\$30.47							
Delaware	\$88.50								\$88.50
District of Columbia	\$50.62							\$50.62	
// // //									
West Virginia	\$46.12								\$46.12
Wisconsin	\$59.42	\$59.42							
<b>AVERAGE TIPPING FEE CHARGE</b>		<b>\$40.17</b>	<b>\$22.85</b>	<b>\$27.50</b>		<b>\$52.00</b>	<b>\$85.00</b>	<b>\$53.07</b>	<b>\$51.71</b>

# State Data Measurement Sharing Program (2014)

Average Tipping Fee Gate Charges (\$ per ton)

No Data Available 1 to 35 35 to 45 45 to 65 65 Plus



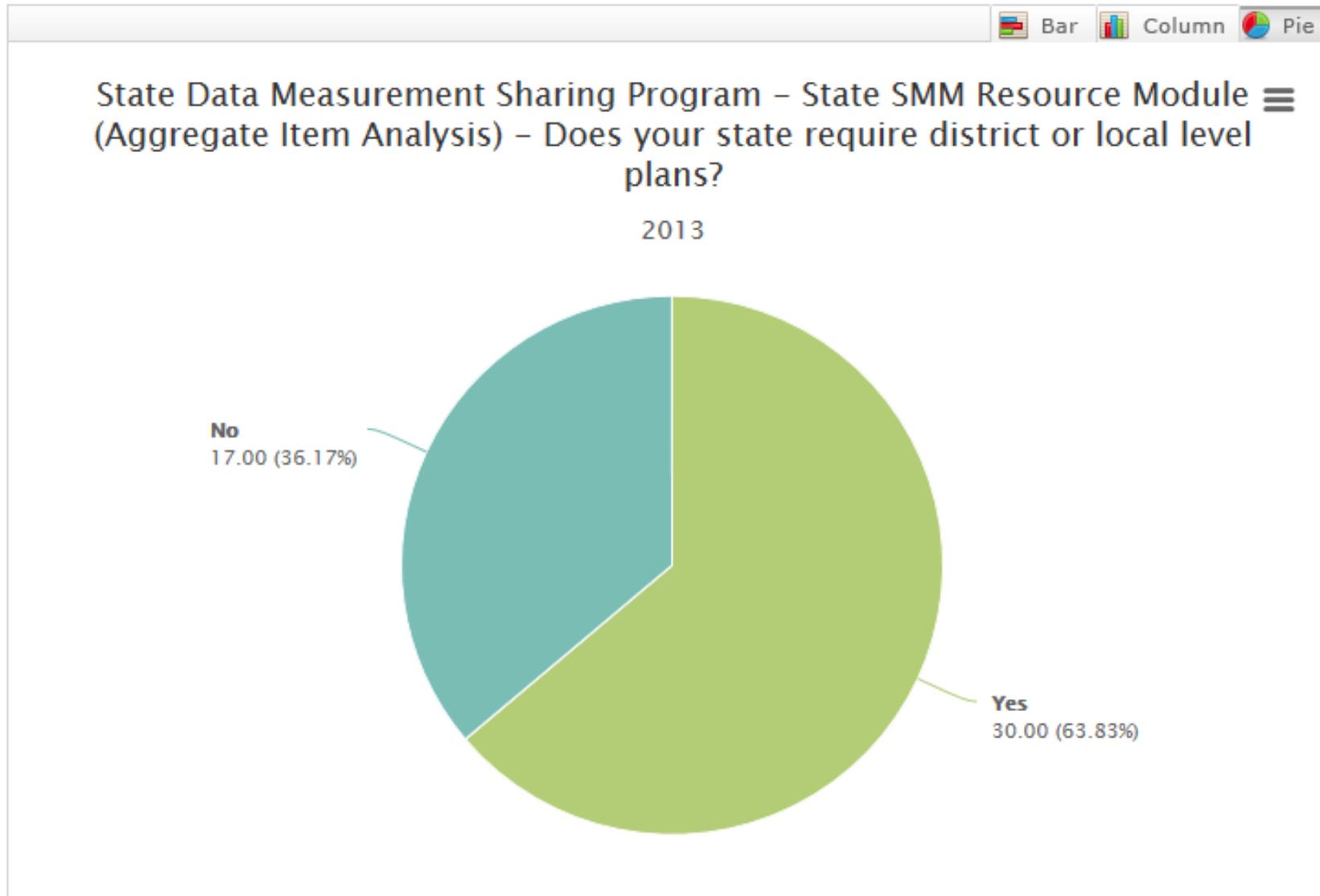
# SMM Resource Module

- 2013 first year for the Resource Module
- Contains programmatic information for all 50 states
  - Information originally gathered by each Region
  - States were given several months to review/correct before launch
- States can make updates at any time, but will encourage annual updates during same timeframe as data entry for template
- Example aggregate results follow
- Multiple reports developed

# SMM Resource Module Reports

- Key Drivers of State Programs
- Zero Waste Goals
- Overall Waste Diversion Goals
- Recycling Goals
- Composting Goals
- Other Goals
- Solid Waste Management Hierarchy
- Mandatory Recycling Programs
- Other Drivers

# SMM Resource Module Results



Export as:

XLS



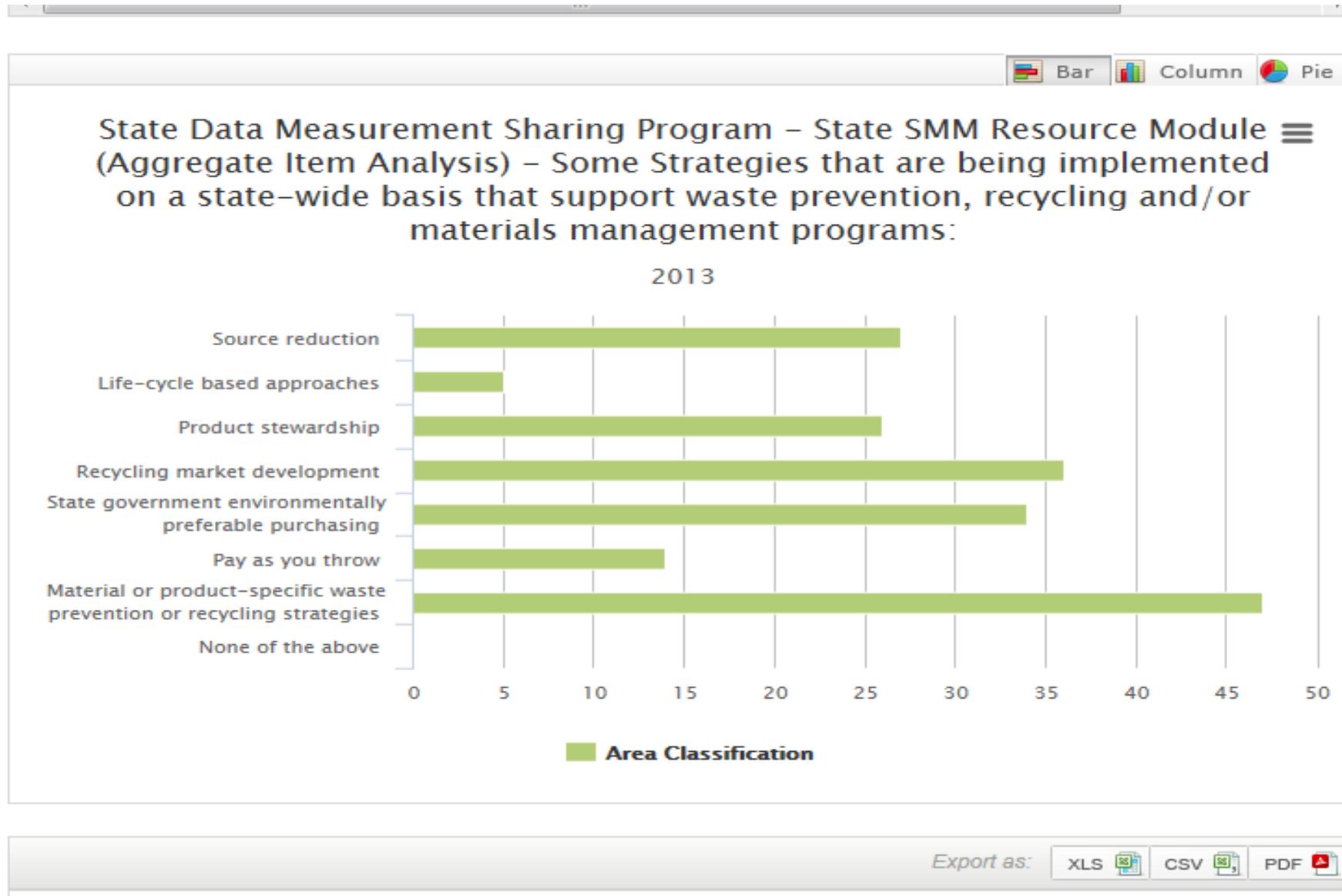
CSV



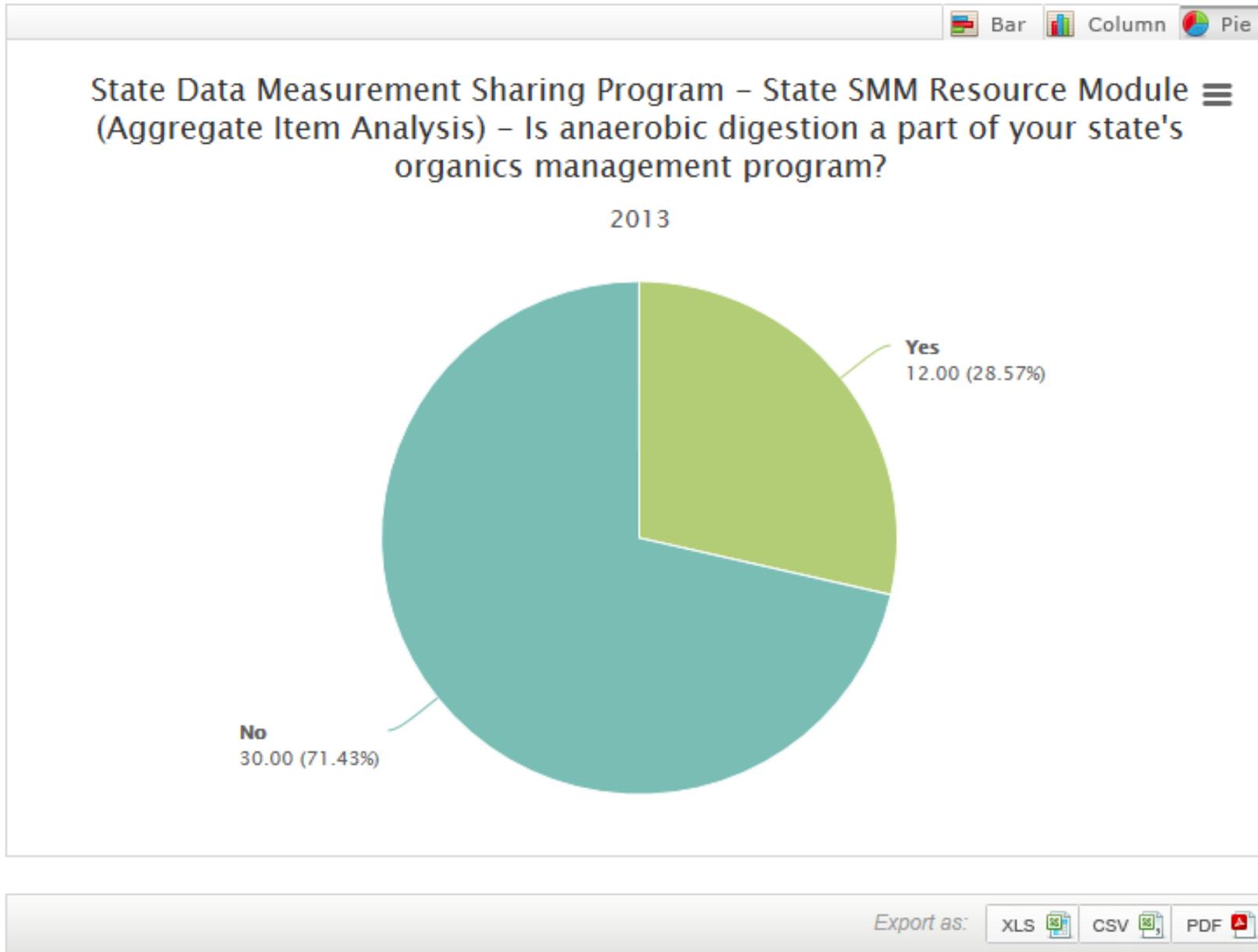
PDF



# SMM Resource Module Results



# SMM Resource Module Results



# Examples of State Successes

- Alabama launched grant program to collect recycling data from local governments and municipalities.
- Florida has indicated that the use of a commercial system has helped them collect data to meet 75% goal.
- South Carolina noted that the system is core to their reporting operations and the library has a wealth of knowledge.
- Tennessee uses the data to prepare for conferences and meetings. Module saves time looking up information from States.
- Industry and trade association groups along with Organizations like Recycling Partnerships, Waste Management Sustainability, Keep America Beautiful, Moore and Associates, and others support this effort and see partnership opportunities.

# SDMSP Measurement Team

## State iTeam Participants

- Ohio Matthew Hittle
- Tennessee Larry Christley  
Seth McCormick
- South Carolina Amanda St John

Looking for more volunteers

# EPA Measurement Team

Janet Bowen (R1)

Dale Carpenter (Region 2)

Peter Piergiovanni (Region 3)

Delores Rodgers-Smith (Region 4)\*

Rhonda Rollins (Region 4)

Susan Mooney (Region 5)

Julie Schilf (Region 5)

Renee Bellew (Region 6)

Marcus Rivas (Region 7)

James Callier (Region 7)

Benjamin Bents (Region 8)

Jenny Stephenson (Region 9)

Domenic Calabro (Region 10)

Kent Foerster (HQ) \*

Hope Pillsbury (HQ)

Ksenija Janjic (HQ)

Tyler Rubright (HQ)

## **Management Co-Leads**

Ronald Vance (HQ)

Jay Bassett (Region 4)

Jerri Anne Garl (Region 5)

## **Staff Co-Leads \***

## **Glen Koroluk & the Emerge Team**



# **Waste & Materials Management Tracking in ENERGY STAR Portfolio Manager**

EPA's ENERGY STAR Portfolio Manager® is an online tool anyone can use to measure and track energy and water consumption, as well as greenhouse gas emissions.

- Use it to benchmark the performance of one building or a whole portfolio of buildings, all in a secure online environment (one tool for energy, water, waste)

- Check it out at

<https://portfoliomanager.energystar.gov/pm/login.html>

- It's free to use and creating an account is quick and easy



# Widespread Use of Portfolio Manager

- Used by 450,000 properties, representing 40+ billion square feet – about 45% of the commercial building market
- Nearly 95,000 properties track water use
- EPA provides training, technical support, guidance on using Portfolio manager and best practices for greater efficiency, outreach, and recognition

# The Opportunity

## (Release in May/June 2016)

- ENERGY STAR Partners asked for waste tracking
  - Value in one platform to track and manage energy, water, & waste
  - Increasing demands for sustainability reporting, which Portfolio Manager can help streamline
- The commercial sector generates roughly 1/2 of the total MSW
- Tracking in Portfolio Manager can help:
  - Measurement is key to management
  - Example: Buildings that benchmarked energy consistently over 4 years reduced energy use by 2.4% per year

# Waste Tab

- **Landing page**
  - Similar pages being built for Energy and Water
- **Graphics**
  - Line graph for the historical trend (5 years) by mgt. method
  - Pie chart of breakdown by mgt. method
- **Tables**
  - Table of waste meters that are used in metrics
    - Material Type, Management Method, Entry Frequency, Most Recent Date
  - Waste meters that are not used in metrics (e.g. sub-meters)

MyPortfolio | Sharing | Planning | Reporting | Recognition

## 1310 L Test

1310 L street, NW, Washington, DC 20005 | [Map It](#)  
 Portfolio Manager Property ID: 3218272  
[Year Built:](#) 2002  
[Edit](#)

Not eligible to apply for ENERGY STAR Certification

**ENERGY STAR Score (1-100)**  
 Current Score: 93  
 Baseline Score: [N/A](#)

Summary | **Details** | Energy | Water | Goals | Design

### Meter Summary

2 Energy Meters Total  
 2 - Used to Compute Metrics

[Add A Meter](#)

Current Energy Date  
 Mar 31, 2014

[Enter Your Bills](#)

### Energy Use by Calendar Month

Site Energy (kBtu)

Similar to energy, there will be a waste tab

• Natural Gas • Electric - Grid

[Export Data by Calendar Month](#)

### Four Ways to Enter Bill Data

1. Manually
2. Use our [simple spreadsheet](#) (one meter) to upload or Copy/Paste
3. Use our [complex spreadsheet](#) (multiple meters + multiple properties)
4. [Find an organization](#) to electronically enter your data into Portfolio Manager

### Meters - Used to Compute Metrics (2)

[Change Meter Selections](#) [View as a Diagram](#) [Add A Meter](#)

Name Meter ID	Energy Type	Most Recent Bill Date	In Use? (Inactive Date)
<a href="#">Electricity</a> 5103033	Electric - Grid	04/09/2014	Yes
<a href="#">natural gas</a> 5103045	Natural Gas	04/18/2014	Yes

### Your Property is: [Edit](#)

- A Single Building
- Part of a Building
- A Campus of Multiple Buildings

# Methods of Data Entry

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- **Regularly** – Meters for materials that are picked up on an ongoing basis (e.g. weekly pickup of trash and recycling). There are two basic paths:
  - Measured – Requires a weight or volume for each entry
    - This can be marked as “estimated” if it is a weight that the user estimates on his/her own
  - Container Size – Is based on the size of the container
    - User enters a container size, and specifies the number of times it was emptied and the percent full
- **Intermittently** – Meters for infrequent or 1-time events (e.g. annual donation of electronics, or construction materials)

# Volume Conversions

- **Volume conversions**
  - Used to convert volume into weight
  - Important because the main unit for metrics and reporting is tons
- **Materials without conversions**
  - Cannot use “container size” option
  - These materials are required to provide a weight
  - If they need to estimate the weight, there is a way to mark each entry as estimated

Materials without Volume Conversions
Appliances
Batteries
Electronics
Furniture
Lamps/Light Bulbs
Office Supplies
Regulated Medical Waste
Other

# How Can You Get Involved?

- Several states and local governments leverage Portfolio Manager in their energy and climate policies
  - Lead by Example policies that call for the use of Portfolio Manager to benchmark the energy (and in some cases, water) use of public buildings
  - Campaigns and competitions that encourage all commercial buildings to track and reduce energy (and often water) use
- Join us for the Measurement Results Webinar on May 19, 2016 @ 1:00pm CDT
- Participate in State Measurement Meeting at Resource Recycling Conference – Tuesday August 30, 2016 in New Orleans. Sign up at: <http://rrconference.com>
- 2015 Template will launch in Fall 2016. Provide quality data to your States for Template & Module by Dec. 31, 2016.

# Sustainable Materials Management

## Questions?