DRAFT Evaluation of 2013 Net Cost Report Information

Overview

The following tables and discussion are a summary of the DRAFT evaluation of as-reported data contained in 2013 Net Cost Reports, submitted pursuant to Title 14 of the California Code of Regulations (CCR) section 18660.10, pertaining to the management of covered electronic waste (CEW). This work was performed by staff of the CalRecycle electronic waste recycling program.

In general, the tables show the reported net costs per pound of recovering and recycling CEW among system participants when the as-reported costs are examined, revealing weighted average, mean, and median costs. They also show the percentage of participating organizations that reported costs lower than the current standard payment rates – $0.16/lb. recovery and $0.23/lb. recycling – within selected segments of participants. Figures are presented in cents per pound unless otherwise noted.

Also presented is a comparison and brief discussion of 2013 data with respect to previous years' data.

Analysis

Program compiled "as-reported" 2013 data and examined it in a variety of ways to gain insights into industry costs and inform CEW payment rate considerations. Wide variations in costs were reported by both collectors and recyclers. This is to be expected due to the range of business practices and scales within the industry. It is also certain that there are errors contained in the reported costs and revenues in some Net Cost Reports, as evidenced by some reports asserting recovery cost of several dollars per pound. To compensate for the likelihood of extreme instances of faulty data affecting calculated industry averages, program excluded reported recovery and recycling costs in excess of plus or minus $1 per pound.

The following tables include:

1. DRAFT analysis of submitted 2013 Net Cost Reports (excluding outlier costs)
2. DRAFT analysis of 2013 Net Cost Reports from operations exceeding one million pounds
3. DRAFT analysis of 2013 Net Cost Reports from operations exceeding five million pounds
4. DRAFT comparison of calculated Weighted Average Costs 2005 - 2013

Table 1. DRAFT Analysis of Submitted 2013 Net Cost Reports (excl. costs +/- $1 per lb.)

As-Reported 2013 Data		Weighted Average*	Mean	Median	Percentage of Reports Below Standard Payment Rate
Recovery (469)	**Revenue**	6.1			-
	Cost	23.0			-
	Net Cost	**16.8**	**15.5**	**11.0**	**61.5%**
Recycling (40)	**Revenue**	12.3			-
	Cost	36.1			-
	Net Cost	**23.8**	**25.0**	**20.5**	**57.5%**
Combined Net Costs		**40.6**	**40.5**	**31.5**	-

** The weighted average reflects the overall industry cost per pound, calculated as if the industry operated as a single organization – i.e., by dividing the collective reported costs and revenues (total net cost) by total pounds recovered and/or recycled by all participants in the study sample.*

The above Table 1 shows the analysis of as-reported 2013 net costs for recovering and recycling covered electronic waste using reports submitted by CEW system participants, but excluding those reports that cited recovery costs in excess of more than $1 or -$1 per pound. One dual entities reported recycling costs that exceeded that range and 18 collectors reported recovery costs that exceeded that range.

The data reveal that on the basis of a simple average (mean) the reported costs of recyclers were notably higher than the standard recycling payment rate, while the reported collectors' costs were slightly lower than the recovery payment rate. The weighted average showed that the recyclers' costs were only slightly above the recycling payment rate, while the collectors' costs increased to above the current recovery payment rate. An examination of the median (mid-point of all reported cost) in Table 1 shows that the payment rates exceeded the reported costs for most collectors (61.5%) and most recyclers (57.5%).

Table 2. DRAFT Analysis of 2013 Net Cost Reports (operations exceeding one million pounds)

As-Reported 2013 Data		Weighted Average	Mean	Median	Percentage of Reports Below Standard Payment Rate
Recovery (46)	**Revenue**	4.9			-
	Cost	23.9			-
	Net Cost	**19.0**	**17.3**	**17.0**	**48%**
Recycling (20)	**Revenue**	12.4			-
	Cost	36.2			-
	Net Cost	**23.8**	**20.8**	**18.5**	**65%**
Combined Net Costs		**42.8**	**38.1**	**35.5**	-

The above Table 2 shows a re-analysis of as-reported 2013 net costs for recovering and recycling CEW by those operations with an annual throughput in excess of one million pounds. This represents about 10 percent of all reporting collectors (63% of recovered pounds), and half of all reporting recyclers (97% of recycled pounds).

This alternative perspective shows costs reported by larger volume collectors as exceeding the existing recovery payment rate when analyzed as either a mean or weighted average. This look at the data also moves the percentage of collectors whose reported costs are covered by the standard recovery rate to just below half (48%). The noticeable jump in weighted average costs for larger volume CEW recovery activities appears counter intuitive, since economies of scale typically lower marginal costs. However, the ongoing practice of paying sources and/or purchasing accumulated CEW from third-party handlers in order to maximize volume may be contributing to the apparent higher costs for these larger operations.

The cost calculations for weighted average for this specific set of larger volume recycler did not change as compared to all recyclers, although the simple mean was reduced by nearly 20%. The percentage of larger volume recyclers whose individual reported costs are covered by the recycling payment rate moved higher (65%) when compared to all recyclers.

Table 3. DRAFT Analysis of 2013 Net Cost Reports (operations exceeding five million pounds)

As-Reported 2013 Data		Weighted Average	Mean	Median	Percentage of Reports Below Standard Payment Rate
Recovery (7)	**Revenue**	4.0			-
	Cost	25.9			-
	Net Cost	**21.0**	**23.4**	**24.0**	**29%**
Recycling (10)	**Revenue**	11.7			-
	Cost	36.1			-
	Net Cost	**24.4**	**21.8**	**21.5**	**60%**
Combined Net Costs *(revised due to earlier typo in sum)*		**45.4**	**45.2**	**45.5**	-

The above Table 3 shows a re-analysis of as-reported 2013 net costs for recovering and recycling CEW by those operations with an annual throughput in excess of five million pounds. This represents just 1.5 percent of all reporting collectors (27% of recovered pounds), and one quarter of all reporting recyclers (83% of recycled pounds).

This alternative perspective shows costs reported by the largest volume collectors as substantially exceeding the existing recovery payment rate when analyzed as either a median, mean, or weighted average. This look at the data also precipitously drops the percentage of the largest collectors whose reported costs are covered by the standard recovery rate (29%). Again, the higher weighted average costs for larger volume CEW recovery activities appears counter intuitive, since economies of scale typically lower marginal costs. The ongoing practice of paying sources and/or purchasing accumulated CEW from third-party handlers in order to maximize volume may be contributing to the apparent higher costs for these larger operations.

The largest volume recycler cost calculations for weighted average also increased as compared to all recyclers, although the simple mean and media costs remained below the current recycling payment rate. This indicates that a small number of higher-volume, higher-cost operations may be bending the curve upward. The percentage of the largest volume recyclers whose individual reported costs are covered by the recycling payment rate moved higher (60%) when compared to all recyclers.

Table 4. DRAFT Comparison of Calculated Weighted Average Costs 2005-2013

Comparisons of Weighted Average Net Costs	2005	2006	2007	2008	2009	2010*	2011*	2012*	2013*
Recovery	17.1	16.7	14.8	16.6	14.4	15.3	15.2	17.1	16.8
Recycling	25.2	21.5	21.0	22.8	18.7	18.1	19.2	17.8	23.8
Combined	42.3	38.2	35.8	39.4	33.1	33.4	34.4	34.9	40.6

**excludes reported recovery costs in excess of $1 and -$1 per pound*

The above Table 4 compares the calculated weighted average net costs for CEW recovery and recycling as reported over the life of the program for all included participants (as opposed to subcategories of operational scale). The recent jump in combined weighted average net costs appears primarily due to increases in reported recycling costs. The factors behind those cost increases remain unclear.