

Analysis of CRT Televisions and Monitor Recycling in U.S. Households

April 2014

The Consumer Electronics Association (CEA) conducted a national, quantitative study administered via telephone interviews to 1,023 U.S. adults between February 20 – 23, 2014. The purpose of the study was to determine the number of cathode ray tube (CRT) devices currently located in U.S. households as well as to assess the number of CRTs disposed in the past 5 years.

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Although CRT sales have disappeared from the U.S. market during the past decade, they currently represent the largest portion of the consumer electronics recycling stream by weight. With the domestic and global decline of glass-to-glass recycling, the market for leaded CRT glass has softened and resulted in higher recycling costs. This recycling analysis is intended to provide insight into the future of CRT flows into the U.S. recycling system.

The February 2014 survey included CRTs currently in use and those in the home that are not used (e.g., in storage). In addition, the February study sought to quantify the number of CRT devices in the home that may be the property of someone else (e.g., loaned from a friend or family). This survey did not attempt to estimate CRT devices in commercial and industrial settings, nor in other non-household locations such as vacation homes and self-storage.

Estimating CRT Televisions and CRT Computer Monitors in Households

CEA asked respondents to provide the number of CRT televisions and CRT computer monitors in their household. Less than half (46%) reported having at least one CRT TV or CRT/Tube PC monitor in their home – 41% reported having at least one CRT TV and 21% reported having at least one CRT monitor. Respondents also provided the number of CRT units in their homes from none up to “4 or more.” Analysis of the results suggests there are approximately 77 million CRT TVs still in U.S. households and approximately 30 million CRT monitors.

With an estimated average weight of 64 pounds for CRT televisions, and after accounting for homes with more than 4 units and those that responded “don’t know,” an independent analysis by the National Center for Electronics Recycling (NCER) finds approximately 6 billion pounds of CRT televisions and 1 billion pounds of CRT monitors (at an average of 32 pounds per unit) are currently in U.S. households.

CRT Disposition Over the Last 5 Years

CEA also asked respondents about recent disposal activities. Approximately 44% of households reported disposing a CRT TV within the past five years, with 45% indicating they donated or gave it away (including to friends or family), 41% reported they recycled the set and 20% threw it in the trash. In a similar vein, 27% of households report they have disposed of a CRT monitor within the past five years. One-third (37%) indicated they either donated or gave it away, another third (34%) reported they recycled it and 20% threw the monitor in the trash. When comparing CEA’s results against a recent study from MIT and NCER (<http://tinyurl.com/qzm5s7z>) there are similar results for the volumes generated/discarded and collected for recycling. Taken together, the two studies find approximately 3-4 billion pounds of CRT TVs and monitors have been collected for reuse or recycling over the last five years. With the increase in collection opportunities due to industry recycling and state law programs, as well as the implementation of landfill disposal bans covering approximately half the U.S. population, most of the 7 billion pounds remaining in U.S. households will likely be recycled during the next decade and beyond. The bulk of CRT TVs and monitors are expected to come back over the next few years or more. However, the limited and changing markets for CRT glass will continue to present challenges.

The NCER and CEA would like to thank Reed Miller and the MIT Material Systems Laboratory for their feedback and additional analysis in comparing the results of this survey analysis to the their modeling developed for the report “Quantitative Characterization of Domestic and Transboundary Flows of Used Electronics - Analysis of Generation, Collection, and Export in the United States.”

