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Program Report on Texas Recycles Computers and Texas Recycles Televisions

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Environmental Assistance Division

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Program Report on Texas Recycles Computers and Texas Recycles Televisions

Prepared by

Environmental Assistance Division

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Bryan W. Shaw, Ph.D., P.E., *Chairman*
Toby Baker, *Commissioner*
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Richard A. Hyde, P.E., *Executive Director*

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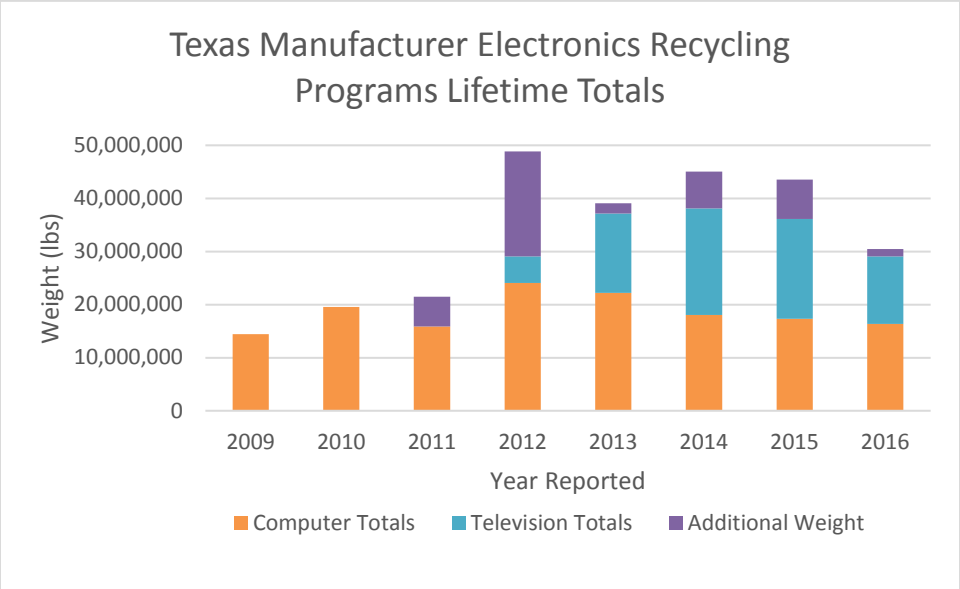
Results from Manufacturers' Annual Reports

The Texas Recycles Computers and Texas Recycles TVs programs have been active for several years and together have resulted in 216,827,951 pounds of computers and televisions being collected, with 205,713,363 pounds of this being recycled and 8,284,354 pounds being reused. Computer manufacturers also collected an additional 43,073,854 pounds over the lifetime of the program, bringing the total weight of electronics collected to 259,901,805 pounds. For the 2016 calendar year, the programs collected a total of 30,467,114 pounds, comprising 16,341,812 pounds of computers, 1,403,845 pounds of additional electronic equipment, and 12,721,457 pounds of televisions. See *Chart 1* below for the weights collected since the creation of both programs.

Chart 1. Texas Manufacturer Electronics Recycling Programs Lifetime Totals



Texas Recycles Computers Program

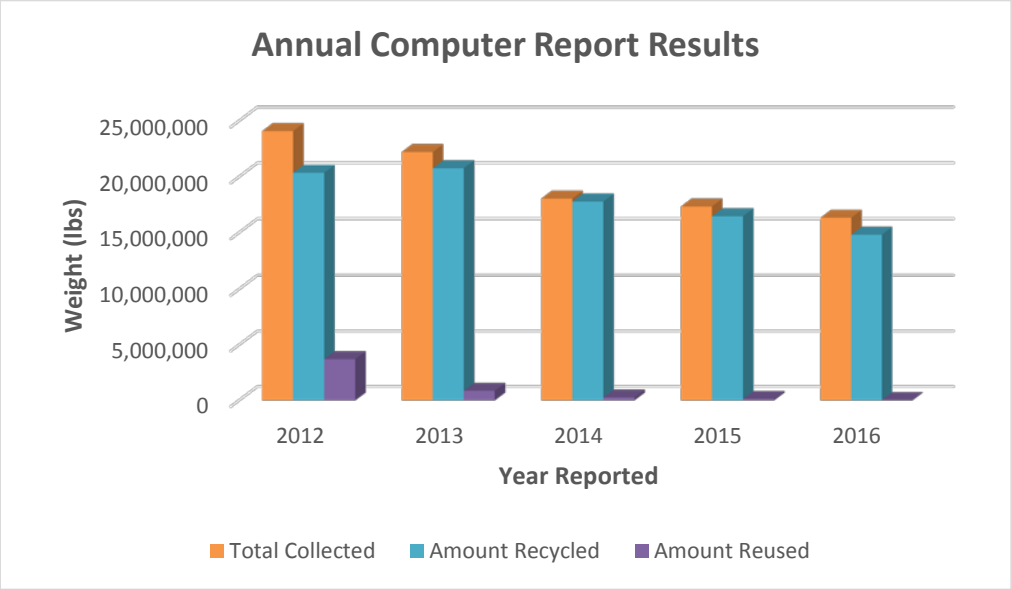
In reporting year 2016, the total combined weight of computer equipment collected was 16,341,812 pounds. The total amount recycled was 14,821,587 pounds and the total amount reused was 26,517 pounds. Comparatively, the total weight of computer equipment collected in 2015 was 17,347,738 pounds. Of that collected weight, 16,475,708 pounds were recycled and 127,614 pounds were reused.

In addition to recycling covered computer equipment, many computer manufacturers also voluntarily collect televisions and other electronics for recycling. The TCEQ allows computer manufacturers to report other electronics collected, not just the computer equipment covered under the program. For 2016, manufacturers reported collecting 1,403,845 pounds of additional non-covered electronics. The number was lower than 2015 voluntary collection amounts of 7,428,180 pounds. Some manufacturers who typically reported voluntary collection weight indicated they chose not to report additional voluntary collection weight this year since the electronics were not computer related. The voluntarily

reported numbers that included televisions reported under the Texas Recycles TVs program were excluded.

Historical data for the past five years of reporting is reflected in *Chart 2* below.

Chart 2. Annual Computer Report Results



Texans have many opportunities to recycle their computer equipment and other electronics outside of the Texas Recycles Computers Program. Collection events coordinated by municipalities, local nonprofit groups, private recyclers, and community-oriented businesses are additional ways Texans can recycle their computers. Since some of the recyclers do not report to the TCEQ, the agency's reported number does not fully represent recycling activity in Texas.

As in previous years, some reports this year listed zero pounds of computer equipment collected, reused, or recycled. A common reason for a manufacturer to report collecting no computer equipment is that the manufacturer is a small business with a clientele limited to surrounding homeowners who do not often buy new equipment. Additionally, in situations where manufacturers' customers are primarily businesses, and personal equipment is rarely sold, little or no personal or home business computer equipment was returned for recycling or reuse. With the continuing increase in manufacturers entering the tablet market, relatively few new products have reached their end of useful life and been returned for recycling.

As discussed in previous years, with the rapid advancement of technology, electronics continue to become lighter and more compact. We have proposed that this trend could lead to manufacturers reporting lower total weight of materials collected. A report published in July 2011 on behalf of the

Consumer Electronics Association (CEA) detailed this manufacturing trend between 2004 and 2010 from cathode ray tubes (CRT) to lighter flat panel technology for televisions and computer monitors.[1]

Appendix 1 lists amounts reported by each manufacturer for the 2016 calendar year. One manufacturer failed to report, as indicated by data in *Appendix 1* being left blank. The manufacturer no longer produces computers and was removed from the program.

Texas Recycles TVs Program

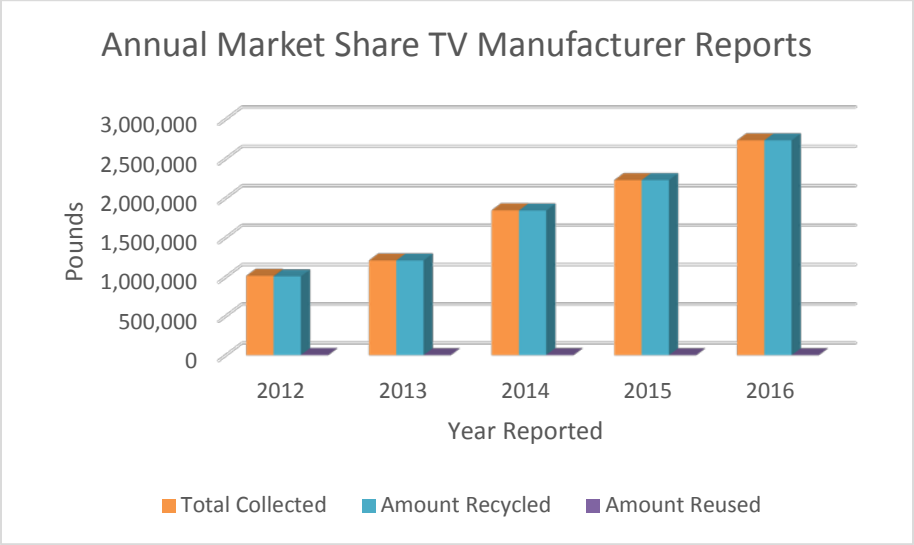
For 2016, the total combined weight of covered television equipment collected was 12,721,457 pounds.

Manufacturers participated in the Television Recycling Program by collecting their assigned market share or by participating in an approved Recycling Leadership Program. Fifteen manufacturers participated in the market share program. The TCEQ calculated the recycling rate and market share as required for these 15 manufacturers. The recycling rate based on 2016 reports was determined to be 10.4 percent, an increase over the previous year. Manufacturers were provided their market share based on this recycling rate prior to Dec. 1, 2016. Manufacturers are required to collect at least this much in 2017.

The weight of televisions reported as having been collected in 2016 by manufacturers that participated in the program as market share participants was 2,731,457 pounds. Of that collected weight, 2,731,367 pounds were recycled and no television weight was reported as reused.

Chart 3 shows the weights reported as being collected by manufacturers that chose to participate under the market share option.

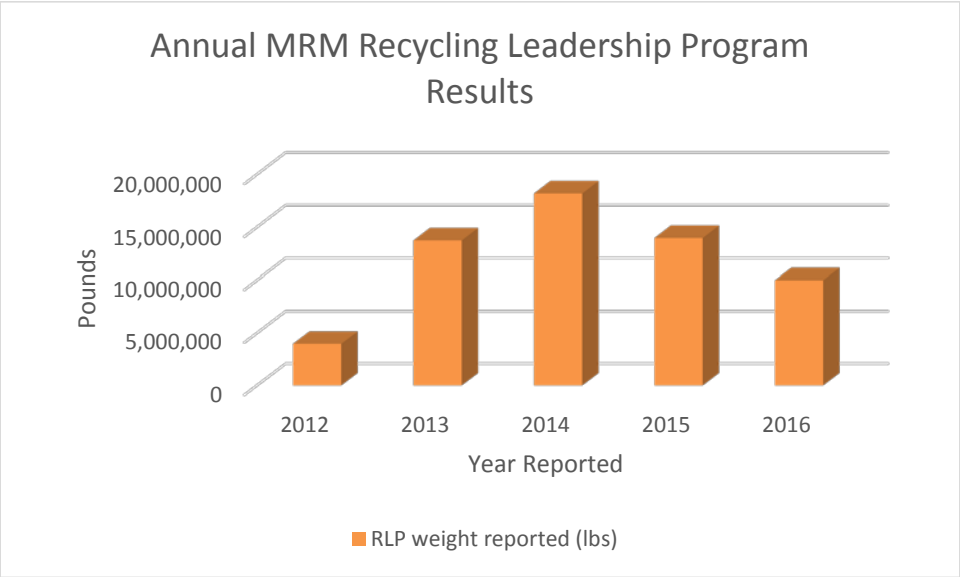
Chart 3. Annual Market Share TV Manufacturer Reports



[1] Available at <Pike Research: Materials Footprint Reduction of Televisions and Computer Monitors>.

In 2016, there was one recycling leadership program with 14 manufacturers that was operated by MRM Manufacturer RLP. The RLP submitted their required biennial report at the beginning of 2017 with recycling information provided for the previous two years of operation, 2015 and 2016. The manufacturers participating in the RLP recycled 13,973,000 pounds in 2015 and 9,990,000 pounds in 2016. This information is shown graphically in *Chart 4*.

Chart 4. MRM Manufacturer Recycling Leadership Program



The MRM Manufacturer RLP voluntarily ended at the beginning of 2017, shifting its participating manufacturers into the market share model. These manufacturers were required to submit both their 2015 and 2016 sales data along with their 2017 Annual Registrations so that a recycling rate could be calculated which included their recycling efforts. The updated recycling rate came out to 15.9 percent, and these manufacturers' market share allocations were calculated based on this recycling rate. The manufacturers were provided their market shares.

Appendix 2 lists data reported by each manufacturer in the 2016 reports. The numbers reflect amounts sold and collected in calendar year 2016. Additionally, the individual market shares are provided. This data was submitted by manufacturers through February 2017. At the time of this report 24 manufacturers representing 41 brands have submitted complete reports covering 2016 and registered for their 2017 programs. An additional two manufacturers representing four brands satisfied their program requirements by participating through the Texas Recycles Computers program. A small number of manufacturers failed to report, indicated where their data has been left blank. These manufacturers have been removed from the program.

Registered TV Recyclers

Beginning Jan. 31, 2014, television recyclers were required to report the total weight or volume of TVs received, recycled, and disposed of in the preceding calendar year. In CY 2016 (Jan. 1, 2016-Dec. 31, 2016), Texas TV recyclers received approximately 18.7 million pounds, recycled 17.1 million pounds, and disposed of zero pounds of television equipment.

Appendix 1- 2016 Computer Manufacturers' Reported Amounts

Manufacturer Name	*Brand Name(s)*	*Wt Collected (lbs)*	*Wt Recycled (lbs)*	*Wt Reused (lbs)*
@Xi Computer Corp.	Xi Computer, @Xi Computer	0	0	0
Acer America Corporation	Acer, Acer View, Aspire, eMachines, Gateway	1005020	1005020	0
Advanced PC Products, Inc.	Advanced PC, Advanced PC Quasar	100	100	0
AG Neovo Technology Corporation	Ag Neovo	0	0	0
Altex Electronics Ltd.	Altex Electronics	24323	24323	0
Amazon Fulfillment Services, Inc.	Kindle Fire	16795	234	7337
Apple Inc.	Apple, Next	2975403	2975403	0
ASUS Computer International	ASUS	13	13	0
Avinext	Avinext, MicroAge, SuperMicro	3120	3120	0
Azpen Innovation, Inc.	Azpen	127	127	0
Barnes & Noble	Barnes & Noble (NOOK)	15	15	0
Bass Computers	Bass Computers	303	303	0
BenQ American Corp.	Ben Q	0	0	0
Best Buy	Dynex, Insignia	866486	866486	0
Biblezon	Biblezon, Biblezon Catholic Tablet, Biblezon Kids Tablet	0	0	0
Bits Technical Corporation	Bits Technical Corporation	0	0	0
Cellco Partnership	Verizon Ellipsis	17884	58	17826
CHUWI Innovation & Tech	CHUWI	0	0	0
Computer Shak, Inc.	Computer Shak, Inc.	3	2	1
Craig Electronics, Inc.	Craig	0	0	0
Curtis International, Ltd.	Klu, Proscan	0	0	0
Cyberpower, Inc.	Cyberpower	0	0	0
David Anderson Consulting	David Anderson Consulting			
Dell Inc.	Alienware, Dell	4050244	2566950	0
DoubleSight Displays	Doublesight	106	106	0
DPI, Inc.	Zeki	0	0	0
ECP Computers & More	ECP Computers	0	0	0
Elo Touch Solutions, Inc	Elo	0	0	0
eMatic	eMatic	12	0	15
Envision Peripherals, Inc.	AOC, Envision	0	0	0
Equus Computer Systems Inc.	Mirus, Nobileview, Nobilis, Vitamobility	0	0	0

Manufacturer Name	*Brand Name(s)*	*Wt Collected (lbs)*	*Wt Recycled (lbs)*	*Wt Reused (lbs)*
Fujitsu Computer Systems Corporation	Fujitsu, Fujitsu-Siemens	0	0	0
Gammatech Computer Corporation	Durabook, Slimnote	0	0	0
Google, Inc	Chromebook	0	0	0
HP, Inc.	Apollo Computer, Compaq, Digital Equipment Corp. (DEC), Hewlett-Packard, VooDoo PC	2538945	2538945	0
Hisense USA	Hisense	0	0	0
Howard Technology Solutions	Howard	0	0	0
HTC Corporation	HTC	0	0	0
HUAWEI DEVICE USA	Huawei	0	0	0
Hyundai IT America Corp	Hyundai, Hyundai Imagequest	0	0	0
iBoss, Inc. (Phantom Technologies)	Phantom Technologies (iBoss)	0	0	0
iBuyPower	iBuyPower	0	0	0
Ingram Micro	V7	0	0	0
International Business Machines	IBM	0	0	0
International Products Sourcing Group	Powerspec, Winbook	24334	24334	0
Kidz delight	Kurio	0	0	0
Komputer + Peripherals, Inc.	Komputer +	3250	3250	0
Lenovo (United States) Inc.	Lenovo, Medion	9	9	0
LG Electronics USA, Inc.	Goldstar, LG, Zenith	1350000	1350000	0
LINSAY	LINSAY	8	0	0
M&A Technology	M&A Technology, Manda	0	0	0
Mattel	Mattel, Nabi	0	0	0
Maverick Computer Services	Maverick Computer Services	0	0	0
Michley Tivax	Michley, Michley Tivax, Mi-Traveler, Tivax	14	5	9
Microsoft Corporation	Microsoft (Surface)	826	826	0
Motorola Mobility, LLC	Motorola	0	0	0
MSI Computer Corp.	MSI	0	0	0
Naxa Electronics	Naxa	0	0	0
NEC Display Solutions of America, Inc.	NEC, NEC AccuSync, NEC MultiSync	0	0	0
Nixeus Technology	Nixeus	45	0	45
NVIDIA Corp	ShieldPortable, Shield Tablet	0	0	0
Oracle	Sun	0	0	0
Panasonic Corp of North America	Panasonic	0	0	0
Paxson Enterprises, Inc.	Paxson Enterprises, Inc.	57	0	57

Manufacturer Name	*Brand Name(s)*	*Wt Collected (lbs)*	*Wt Recycled (lbs)*	*Wt Reused (lbs)*
PC & Cable	PC & Cable	700	0	0
Planar Systems, Inc.	Planar	221	0	0
PLR IP Holdings, LLC	Polaroid	0	0	0
Premio, Inc.	Premio	0	0	0
Pro-com Products, Inc.	D2 Pad	0	0	0
Proexpress Distributor, LLC	Dragon Touch, KingPad	56	16	40
Rullingnet Corp (Vinci)	Vinci	0	0	0
Samsung Electronics Co.	Samsung, Galaxy Tab 4 Nook, Samtron, Syncmaster	3079950	3079950	0
Seneca Data Distributors	Nexlink	0	0	0
Shuttle Computer Group, Inc.	Shuttle Computer Group, Inc.	0	0	0
Sony Electronics Inc.	Sony	375155	375155	0
TCT Mobile (US) inc.	Alcatel OneTouch	0	0	0
TMAX Digital	Apex, NuVision, TMAX	0	0	0
Trans Cosmos America (MRM)	VAIO	0	0	0
Toshiba America Information Systems, Inc.	Toshiba	36	36	0
USA111	iRULU	0	0	0
Velocity Holdings, LLC	Velocity Micro	0	0	0
Venturer Electronics, Inc.	Pro12, RCA	0	0	0
VideoTex Systems	VideoTex	0	0	0
ViewSonic Corporation	Cybervision, Nokia, Optiquest, Utobia, Viewsonic	0	0	0
Visual Land, Inc.	Visual Land	0	0	0
Vizio, Inc.	Vizio	0	0	0
Vtech Electronics North America, LLC	Vtech	0	0	0
Wacom Technology Inc.	Wacom	0	0	0
Westgate Computers	Westgate Computers	1282	1045	237
Wintec Industries, Inc.	Filemate	264	0	0
YIFANG USA INC.	Nextbook	0	0	0
Zingarr Sales & Marketing, LLC	AARP RealPad	0	0	0
Zydeco Computer Technologies	Zydeco Technologies	6706	5756	950

Appendix 2- 2016 TV Manufacturers' Reported Amounts and 2017 Market Share

2016 Manufacturers' Reported Amounts and 2017 Market Share Allocations

Manufacturer	*Brands*	*Sold (lbs)*	*Collected (lbs)*	*Recycled (lbs)*	*Reused (lbs)*	*Market Share (lbs) Assigned for 2017*
Axess Products Corp.	Axess	1,914	0	0	0	284
Bang & Olufsen America, Inc.	Bang & Olufsen	2,012	435	435	0	486
Best Buy	Insignia, Dynex, Toshiba, Sharp	7,811,732	2,314,813	2,314,813	0	1,054,122**
China America Electronics						1,778
Craig Electronics	Craig	6,984	887	887	0	1,025
Curtis International Ltd	Curtis, ProScan, Sylvania	95,249	6,140	6,140	0	9,964
DPI, Inc.	GPX, iLive, WeatherX, Memorex	42,836	3,286	3,286	0	4,748
EliteLux (formerly SSNA)	Sansui	134,868	15,2143	15,213	0	17,161**
Funai Corp.	Funai, Magnavox, Philips, Sanyo	7,061,504	913,474	913,474	0	1,048,206**
Haier America	Haier	351,273	43,430	43,340	0	44,788
Hisense USA	Hisense	3,562,380	121,795	121,795	0	182,699**
Hitachi	Hitachi	435,668	30,443	30,443	0	77,993**
Innovative DTV Solutions	RCA (22" and smaller)	*	500	500	0	*
JVC America	JVC	125,242	30,177	30,177	0	44,996**
LG Electronics	LG, Zenith, Goldstar	10,721,300	1,350,000	1,350,000	0	1,432,462**
Naxa Electronics, Inc.	Clear Tunes, NAXA	473	171	171	0	20
ON Corp US, Inc.	RCA (19" and larger)					
Panasonic Corporation of North America	Panasonic	39,097	6,099	6,099	0	N/A
PLR IP Holdings	Polaroid	204,214	15,223	15,223	0	20,524**

Manufacturer	*Brands*	*Sold (lbs)*	*Collected (lbs)*	*Recycled (lbs)*	*Reused (lbs)*	*Market Share (lbs) Assigned for 2017*
Samsung Electronics	Samsung	29,819,707	4,879,980	4,879,980	0	4,319,328**
Sceptre, Inc.	Ocosmo, Sceptre					11,136
Sears Holding Management Corporation	Kenmore, Kenmore Elite	22,610.3	0	0	0	0
Seura, Inc.	Seura	3,430	0	0	0	357
Silo TV	Silo					260
Sony Electronics, Inc.	Sony	5,058,259	875,757	875,757	0	596,516
Sunbrite TV, LLC	Sunbrite TV	155,194	0	0	0	9,946**
Tongfang Global, Inc.	Element, Seiki, Westinghouse	1,601,121	531,718	531,718	0	377,287
TTE Technology	TCL	*	91,344	91,344	0	*
VIZIO, Inc.	VIZIO	*	1,269,633	1,269,633	0	*

*****Some manufacturers have marked their sales data as confidential and proprietary, in accordance with 30 TAC §328.189[2]

Market Share fields marked N/A are the result of a manufacturer dropping out of the television market.

*Market shares marked with ** were calculated using the revised recycling rate for prior MRM RLP participants.*

2017 TV Manufacturers Participating under the Texas Recycles Computers Program

Manufacturer	*Brands*
NEC Display Solutions of America, Inc.	NEC, NEC AccuSync, NEC MultiSync,
Viewsonic Corporation	Viewsonic

[2] Available at < 30 TAC, RULE §328.189 >.