



The Oklahoma Computer Equipment Recovery Act:

A Summary of the 2019 Manufacturer Annual Reports

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Oklahoma Department of Environmental Quality
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Submitted To:

The Governor, the President Pro Tempore of the Senate, and the
Speaker of the House of Representatives

Introduction

The Oklahoma Computer Equipment Recovery Act (“Act”), 27A O.S. § 2-11-601 *et seq.*, was signed into law May 12, 2008, and became effective January 1, 2009. The Act requires manufacturers, as defined in 27A O.S. § 2-11-603, to submit annual reports to the Oklahoma Department of Environmental Quality (“DEQ”) no later than March 1st of each year that include:

1. A summary of the recovery program implemented by the manufacturer during the previous calendar year, specifically describing the methods of recovery implemented by the manufacturer;
2. The weight of covered devices collected and recovered during the previous calendar year;
3. The location and dates of any electronic waste collection events during the previous calendar year, if any, and the location of collection sites, if any; and
4. Certification that the collection and recovery of covered devices complies with the provisions of Section 9 of the Act.¹

The Act requires DEQ to summarize the recovery program in a report for the Governor, the President Pro Tempore of the Senate, and the Speaker of the House of Representatives by the 1st of July.

Background

The Act was created as part of an ongoing, nationwide effort, embraced and supported by the computer industry, to establish convenient and environmentally sound collection, recycling, and reuse of electronics that have reached the end of their useful lives. There are currently 25 states with legislation relating to computer equipment recovery² (*See Figure 3*). Under the Act, consumers, retailers, manufacturers, and DEQ share responsibilities. Calendar year 2019 marks the eleventh year the program has been in place.

Consumer Responsibilities

Consumers are responsible for removing all personal data, or other information, that may be on a covered device that is collected or recovered.

Retailer Responsibilities

Retailers of equipment defined in the Act are not to sell, or offer for sale, a covered device in Oklahoma unless the manufacturer has an approved recovery plan submitted to DEQ. Retailers also cannot offer for sale a manufacturer’s product if it is not properly affixed with the manufacturer’s brand label.

¹ Section 9 of the Oklahoma Computer Equipment Recovery Act states: All covered devices collected pursuant to the provisions of this Act shall be recovered in a manner that is in compliance with all applicable state, federal, and local laws.

² Electronics Recycling Coordination Clearing House (2020). *Map of states with legislation*. <https://www.ecycleclearinghouse.org/contentpage.aspx?pageid=10>

Manufacturer Responsibilities

Manufacturers who produce, sell, import, or offer for sale more than 50 covered devices per year in the State of Oklahoma must adopt and implement a recovery plan that provides reasonably convenient collection services for consumers. Sales, production, and importation include online vendors as well. Recovery plans must explain how collection and recovery is provided at no charge to the consumer.

Manufacturers' recovery plans must also include a statement that they will not dispose of their devices in landfills, or contract with recycling companies who dispose of devices in landfills, other than incidental amounts. Collection methods must also be available and designed to meet the needs of all Oklahoma consumers.

Covered devices must be labeled with the manufacturer's brand, which must be permanently affixed and visible. In addition, manufacturers who maintain websites that provide product information regarding covered devices must include collection and recovery information for consumers and provide that information to DEQ. Manufacturers must submit annual reports to DEQ no later than March 1st of each year.

Manufacturers are divided into two categories: major and minor. A major manufacturer is defined as a manufacturer that sells, produces, or imports 1,000 or more covered devices in Oklahoma. A minor manufacturer is defined as a manufacturer that sells, produces, or imports between 51 and 999 covered devices in Oklahoma. Manufacturers that sell, produce, or import 50 or fewer covered devices in Oklahoma are exempt from registration. According to the fee structure initially established by the Act, major manufacturers pay an annual fee of \$5,000 per year to DEQ, and minor manufacturers pay an annual fee of \$1,000 per year to DEQ. Fees are subject to annual inflation increases. The category differentiation was put in place to alleviate financial burden to small businesses. It was passed as a rule in April 2010 and became a responsibility of manufacturers beginning in 2011. Calendar year 2019 marks the ninth year that manufacturers have paid a fee in Oklahoma.

Oklahoma Department of Environmental Quality Responsibilities

DEQ must review and approve all manufacturer-submitted recovery plans and annual reports.

If plans or reports do not meet the standards of the Act, DEQ must notify manufacturers within 30 days to ensure compliance. DEQ must maintain and make available a list of registered manufacturers who have implemented approved recovery plans, including a separate list of manufacturers who collect additional brands other than their own. Recovery plans and annual reports must be filed and made available to the public, pursuant to the Oklahoma Open Records Act.

DEQ may conduct audits and inspections, take enforcement action, and assess penalties against a manufacturer, retailer, or recycler. DEQ is also responsible for public education regarding collection and recovery of covered devices. DEQ maintains a website with links and information regarding recovery.

Additional Provisions

Section 10 of the Act is administered by the Office of Management and Enterprise Services, previously known as the Office of State Finance and the Oklahoma Department of Central Services. Section 10 states that no state agency shall contract for the purchase of covered electronic devices made by any manufacturer that is not on DEQ's list of registered manufacturers or that has been otherwise determined non-compliant with the provisions of the Act.

Historical Reporting Under the Program

In the first summary to the Governor in July of 2009, the DEQ reported only 15 manufacturers with implemented recovery plans. DEQ made additional efforts to locate manufacturers in the state. By the end of 2009, there were 27 manufacturers with approved recovery plans. That number continued to increase until 2013 when it reached 47 compliant manufacturers. Since then, manufacturer compliance has remained generally consistent (*See Figure 1*). Slight fluctuations throughout the program may be attributed to manufacturers closing, changing their scope of marketing, or merging with other entities over time.

DEQ has several registered manufacturers who are not required to register, by law, but chose to do so of their own accord and, therefore, are not required to submit annual reports or fees. For example, manufacturers who sell military devices, sell to businesses only, or manufacture equipment not covered in the Act, such as televisions, do not meet statutory requirements for reporting. In addition, manufacturers that sell, produce, or import 50 or fewer covered devices in the State of Oklahoma in a given year are not required to submit an annual report or annual fee. Still, many manufacturers maintain their take-back programs even after leaving Oklahoma's program.

Oklahoma increased recycling totals from 2009 to 2011, the first three years of the program. The 2009 collection total was 817,277 pounds. In 2010, manufacturers collected 2,554,632 pounds of electronics tripling the amount recovered in 2009 and boasting the largest increase in the nation. In 2011, a total of 3,150,583 pounds were collected, the highest collection total of the program. The success can be attributed to increased awareness across the state including DEQ's retailer visits, outreach to municipalities, and presentations at public events, schools, and universities. In the first two years, the majority of state programs across the United States saw similar or slightly declined totals; however, Oklahoma remained one of the only states to see a continued increase in collection. This was likely due to growth in the program and additional participation from manufacturers.

In 2012, there was a slight decline in collection totals at 2,422,456 pounds for the State of Oklahoma. In 2013, collection went back up to 2,585,789 pounds. This increase was likely due to the nearly 20 new manufacturers participating in the program. In 2014, totals reached 2,672,595 pounds and was similar in 2015 with the collection total at 2,693,022 pounds.

In 2016, there was a large decrease in collection by almost every major manufacturer with a collection total of 1,616,133 pounds. Another large decrease in collection weight occurred in 2017 with 784,982 pounds collected, Oklahoma's lowest weight collected since inception of the program (*Figure 2*). There were 48 compliant manufacturers in 2011 and 834,780 pounds of equipment were collected. From 2016 to 2018, collection was significantly lower than the previous seven years of collection.

A Summary of 2019 Program Status

In 2019, compliant manufacturers and pounds collected were at a program low. Manufacturers reported 458,401 pounds of collected computer equipment. This is approximately half of what was collected in 2018 and the lowest reported since the beginning of the program. There were 38 compliant manufacturers, also the lowest since 2009, as seen in *Figure 1*. Twenty manufacturers were delinquent on reporting but still maintain their take-back program. Out of the 38 compliant manufacturers, only seven reported significant collection amounts. Dell and LG collected over 150,000 pounds; HP and Best Buy collected over 40,000 pounds; Amazon and Apple collected over 1,000 pounds; and Verizon reported under 1,000 pounds. These are the same seven manufacturers that reported pounds collected in 2018, with the exception of Samsung, which reported 370,500 pounds in 2018 but zero pounds in 2019. Four manufacturers collected under five pounds and all remaining manufacturers reported zero pounds. It appears that the larger computer manufacturers have been collecting computer equipment, but the smaller manufacturers have not been collecting for a number of years.

While manufacturer compliance and pounds collected were down compared to previous years, other components of the Act remained consistent. Four manufacturers joined the program and three manufacturers stopped producing covered devices as defined in the Act. Two manufacturers reported to be minor manufacturers, while 30 reported to be major manufacturers. Four reported to be neither minor nor major manufacturers, meaning they produced, sold, or imported less than 50 covered devices for the year. Twenty-seven manufacturers contracted with certified recyclers to maintain their take-back programs. All current registered manufacturers have implemented mail-back programs, few offer drop-off locations, and one collection event was held. These figures have remained consistent throughout recent years.

Although calendar year 2019 resulted in low manufacturer participation and a lower amount of computer equipment collected, it also resulted in improvements to the program. For instance, a Retailer Inspection Form (*Figure 7*) was created with a focus on outreach to retailers. All seven retailer inspections performed were in compliance. In addition, DEQ's dedicated page for computer recycling³ was modified for Oklahomans to more easily identify recycling options. Lastly, the Annual Reporting Guidance Document (*Figure 4*) was revised to glean the most important information from manufacturers of covered devices. Improvements made in the 2019 calendar year will continue to aid in consumer awareness and manufacturer compliance.

³ <https://www.deq.ok.gov/land-protection-division/recycling/computer-equipment-recycling/>

Program Analysis

This year marks the 11th year that the Oklahoma Computer Equipment Recovery Act has been in effect. The program saw its highest weight of collection in 2011 when the program collected over 3,000,000 pounds of covered devices. Collection remained around 2,500,000 pounds until 2015. Between 2016 and 2018, collection dropped significantly. Collection fell even further in 2019, weighing in at 458,401 pounds. The number of compliant manufacturers remained generally consistent from 2013-2018 with each year consisting of 40-50 compliant manufacturers. However, manufacturer participation also dropped significantly in 2019, with only 33 compliant manufacturers compared to 48 compliant manufacturers in 2018. These declining figures may be attributed to the effects of COVID-19, the rapidly evolving electronic industry, manufacturer participation and consumer convenience.

Effects of COVID-19

The steep decline in pounds collected and in manufacturer participation from 2018 to 2019 may be largely attributed to the disruptions of COVID-19. The majority of manufacturers are located in coastal states that began taking preventative healthcare measures in February, just as reporting was due. Many companies moved toward telework and began to shift their priorities to the wellbeing of their employees. Although 20 manufacturers did not report, their take-back programs are all still in place. COVID-19 may be an explanation for the 20 manufacturers that did not report in 2019. Further, less manufacturers reporting likely resulted in unreported collection, explaining the significantly lower weight compared to previous years. Another result of the virus has been that some manufacturers, such as Best Buy, have suspended their drop-off collection programs. Since Oklahoma consumers largely prefer to drop-off their equipment, rather than utilizing the mail-back services, the effects of COVID-19 will likely affect the weight collected in the 2020 calendar as well. Moving forward, it will remain crucial to follow the effects that COVID-19 has on the electronics recycling industry. Professionals have already begun the discussion and published reports and presentations on the matter. As more data arises, DEQ will continue to monitor the situation and remain responsive.

Evolving Electronics

Not only were numbers low in 2019, but the reported weight of collected equipment has been falling since 2015. This decline in the collection of computer equipment waste can be attributed to the introduction of smart phones as well as modern, lightweight equipment. According to the Pew Research Center,⁴ ownership of smartphones only recently began to rise in the U.S., reaching 69% of adults in 2015, then 81% in 2019. It is becoming more common for consumers to rely on a smartphone for internet use, rather than owning a desktop or laptop computer. In 2015, 8% of U.S. adults used a smartphone as their main internet source, compared to 20% of “smartphone-only users” in 2018. Increasing smart-phone dependency over time can be seen in Figure 5. Tablet

⁴ Pew Research Center (June 2019). *Mobile fact sheet: mobile phone ownership over time*.
<https://www.pewinternet.org/fact-sheet/mobile/>

computers are also becoming more common for consumers. The ownership of tablet computers jumped from 34% in 2014 to 52% in 2019 (*Figure 6*). Further, tablet computers and laptops today are much lighter in weight than computers of the past. For instance, a 2011 desktop iMac weighed upwards of 30 pounds, while a desktop iMac today weighs only 13 pounds; An LG laptop in 2011 weighed 6 pounds, while laptops today can weigh as little as 2 pounds; Tablet computers weigh an average of only 1.75 pounds, and smartphones weigh only 0.3 pounds. Survey results from the Pew Research Center indicate a correlation between the ownership of newer and lighter devices and the decline in manufacturer-reported collection weight. The decrease in pounds of covered devices collected aligns with the rising use of smartphones and tablet computers. As the electronics industry rapidly evolves, these smaller and lighter devices are becoming more publicly available than ever before and are replacing the heavier laptop and desktop computers of the past.

In fact, the industry evolves so quickly that some industry professionals consider a device to be vintage if it is only five years old. Not surprisingly, electronic waste is the fastest growing waste stream in the world.⁵ According to the National Center for Electronics Recycling (NCER)⁶, many states with electronic recycling programs are continually updating and amending their programs by considering a different measure of success, including more types of electronics, implementing landfill bans, and including a wider range of participation. Industry professionals agree that equipment weight collected is not the best measure of success, even though many electronics recycling programs across the country measure success in this way. The DEQ will continue collaborating with industry stakeholders and researching innovative alternatives to efficiently measure success. Additionally, a common update seen throughout the country has been to expand their programs to include more types of electronics, such as televisions. Many Oklahoma consumers who inquire about electronics recycling are interested in recycling televisions, rather than computers. OCERA does not include televisions as covered devices, leaving Oklahomans with limited options for recycling televisions. However, as the EPA⁷ explains, most electronics contain valuable materials such as steel, plastic, and glass that can be reused and recycled. When these materials are sent to the landfill, they remain unrecoverable. Lastly, OCERA only applies to household consumers. Another common amendment throughout the country has been to expand the program to include businesses and even schools.

Manufacturer & Consumer Participation

Finally, decreases in recent collection totals may be attributed to declining manufacturer and consumer participation. Despite that all registered manufacturers offered a mail-back service in 2019, the public expressed concerns of inconvenience and indicated a preference in drop-off

⁵ Holgate, P. (Feb 2018). *How do we tackle the fastest growing waste stream on the planet?*
<https://www.weforum.org/agenda/2018/02/how-do-we-tackle-the-fastest-growing-waste-stream-on-the-planet/>

⁶ Linnell, J. (June 2015). E-Scrap News. *Developments across a decade*.
<http://www.electronicrecycling.org/wordpress/wp-content/uploads/2015/09/NCER-10-year-e-scrap-mag-jun15.pdf>

⁷ United States Environmental Protection Agency. (December 2019). *Basic information about electronics stewardship*. <https://www.epa.gov/smm-electronics/basic-information-about-electronics-stewardship#02>

locations over mail-back programs. However, few registered manufacturers offered drop-off locations and only one manufacturer has held a collection event since 2012.

The Annual Reporting Guidance Document (*Figure 4*) has been updated to allow manufacturers a more efficient means of communicating their yearly data. The DEQ website has been updated to provide a friendlier source of information for consumers. These improvements should beneficially influence manufacturer compliance and consumer awareness, but there are still improvements to be made moving forward.

DEQ is currently promoting electronics recycling by partnering with various communities in Oklahoma to host electronic waste collection events. Manufacturer fees will be used to provide Collection Event Grants to Oklahoma communities as well as pay other costs of the program. Grantees are required to partner with an e-Stewards or R2 certified electronics recycler to ensure proper disposal. These events create convenient and free opportunities for consumers to responsibly dispose of their electronic waste. The events also keep Oklahoma clean by preventing illegal roadside dumping. As consumers continue to express significant interest in drop-off sites, rather than mail-back programs, DEQ will continue to assemble collection events that support Oklahoma communities and the collection of electronic waste.

DEQ will also work toward improving manufacturer and retailer participation. DEQ contacts registered manufacturers in a variety of ways, including invoicing, emailing, and calling, and will continue to do so at a greater frequency. The DEQ will utilize a newly created inspection form (*Figure 7*) to visit more retailers and spread awareness of the Act. The DEQ will also continue to collaborate with industry professionals and remain responsive to consumer desires.

Conclusion

Historically, manufacturer compliance has remained steady throughout the duration of the program (*Figure 1*) while the reported collection weight has been steadily decreasing (*Figure 2*). However, both participation and collection weight dropped significantly in 2019. At the same time, the improvements made in 2019 focused on consumer awareness and manufacturer compliance.

The 2019 calendar year presented many challenges. Moving forward, DEQ will continue to monitor the effects of COVID-19 on the electronics industry; conduct outreach efforts to increase manufacturer, consumer, and retailer awareness and participation; provide technical assistance for community collection events throughout the state; conduct more frequent retailer inspections; continually update its resources; and collaborate with stakeholders to identify areas of improvement. Oklahoma's program will continue to serve our citizens and will continue to evolve.

Figures

The subsequent reporting figures include graphs of compliance (*Figure 1*) and pounds collected (*Figure 2*) in Oklahoma for every year of collection. Also included is a national law comparison map (*Figure 3*), and a sample of the updated Annual Reporting Guidance Document (*Figure 4*). Smartphone dependency over time is depicted in *Figure 5* and the ownership of desktop and tablet computers over time is depicted in *Figure 6*. Lastly, the new Retailer Inspection Form can be found as *Figure 7*.

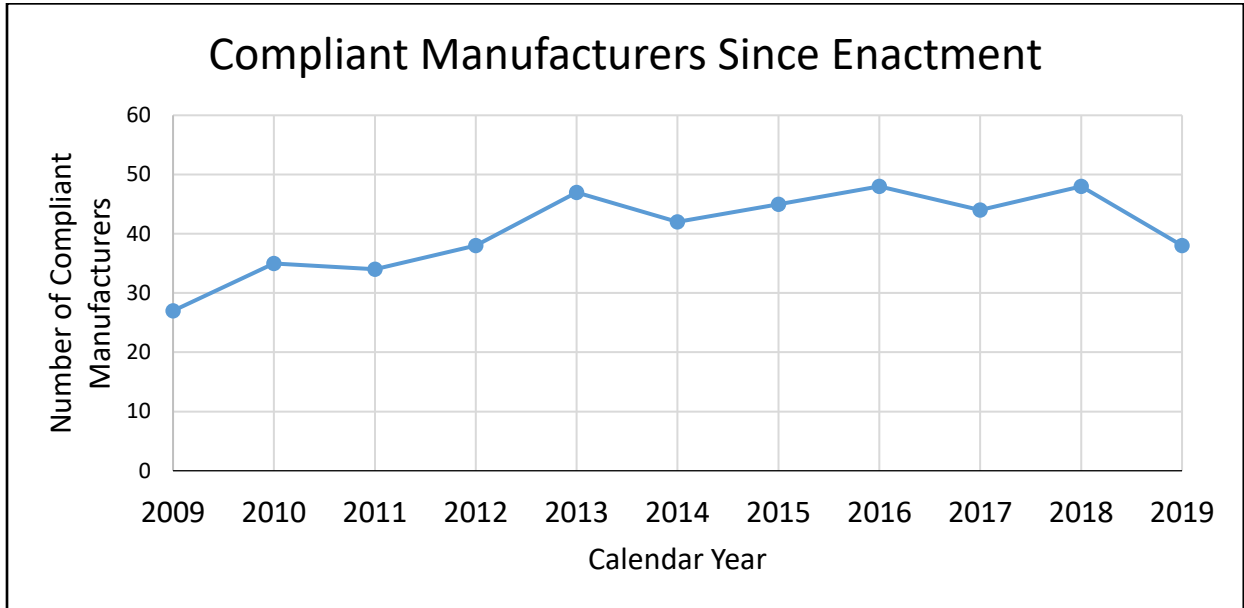


Figure 1: The number of manufacturers in compliance for each given year since 2009. Compliance indicates maintaining a take-back program, submitting an annual report, and paying an annual fee, while complying with the provisions of the Act.

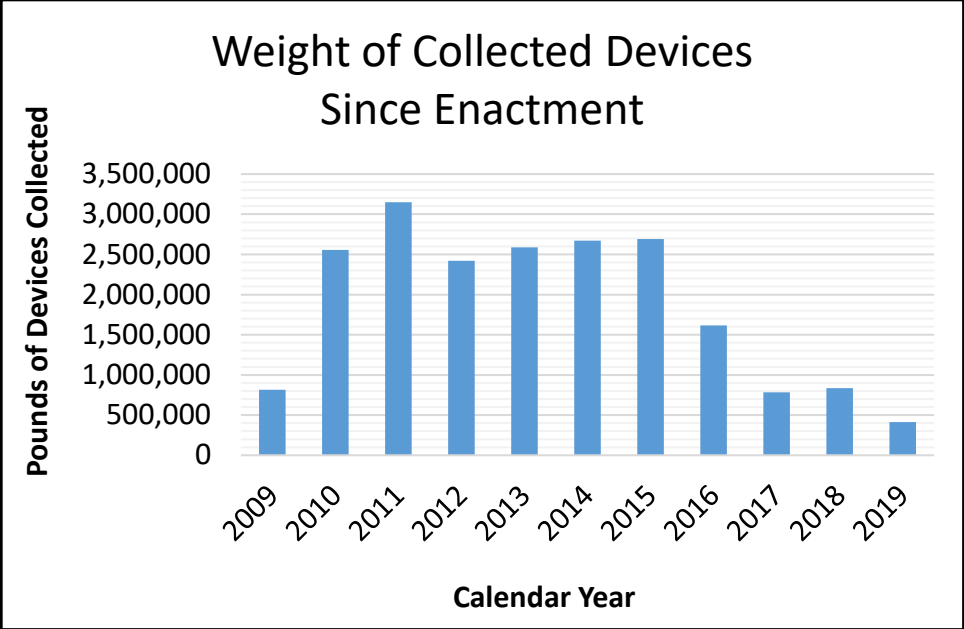


Figure 2: The weight of devices collected by compliant manufacturers for each year since implementation of the program in 2009.

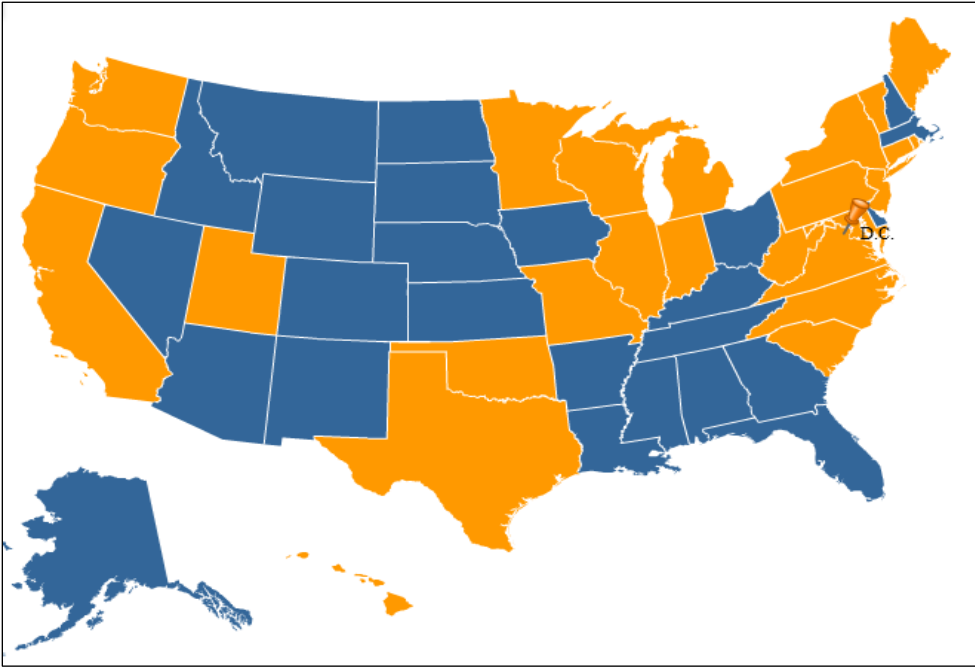


Figure 3: A map depicting states with electronics recycling laws (orange). Twenty-five states have enacted varying electronics recycling program legislation.

OKLAHOMA ANNUAL REPORTING GUIDANCE DOCUMENT

The Oklahoma Computer Equipment Recovery Act (Act) became effective on January 1, 2009. Pursuant to O.S. § 27A 2-11-605(H) and no later than **March 1** of each year, each manufacturer shall submit a report to the Department of Environmental Quality (DEQ). The Act may be found on DEQ's website at the following URL <https://www.deq.ok.gov/land-protection-division/recycling/computer-equipment-recycling/manufacturers-of-electronic-waste/>.

Manufacturer Represented: **Reporting Year (Jan 1 – Dec 31):**

Mailing Address (invoices):

Printed Contact Name: **Contact Email:**

Choose one:

- Major Manufacturer** (sells, produces, or imports 1,000 or more covered devices per year)
- *Minor Manufacturer** (sells, produces, or imports between 51 and 999 covered devices per year)
- *Neither minor nor major** (sells, produces, or imports no more than 50 covered devices per year)
 - If neither, do you plan to sell, produce, or import covered devices next year? Yes No

*** If Minor Manufacturer or Neither**, please provide information on your sales, production, and importation in Oklahoma for the reporting year. The DEQ does not have a specific format for submitting this information as it may differ between manufacturers.

- Describe a brief summary of your current implemented recovery program, listing any notable program or contact changes, and a link to you website's E-waste program. You may include attachments.

Link to website's E-Waste Program:

- List the total weight, in pounds, of covered devices collected:
- Fill out the following table for location and dates of all collection events held during the reporting year. If no events were held, please state this:

Location	Date	Amount Collected

- I hereby certify that all information provided is accurate to the best of my knowledge and that collection and recovery of all covered devices complies with the provisions of Section 9 of the Oklahoma Computer Equipment Recovery Act. Section 9 states all covered devices collected shall be recovered in a manner that is in compliance with all applicable federal, state, and local laws.

Signature Required: _____ Date: _____

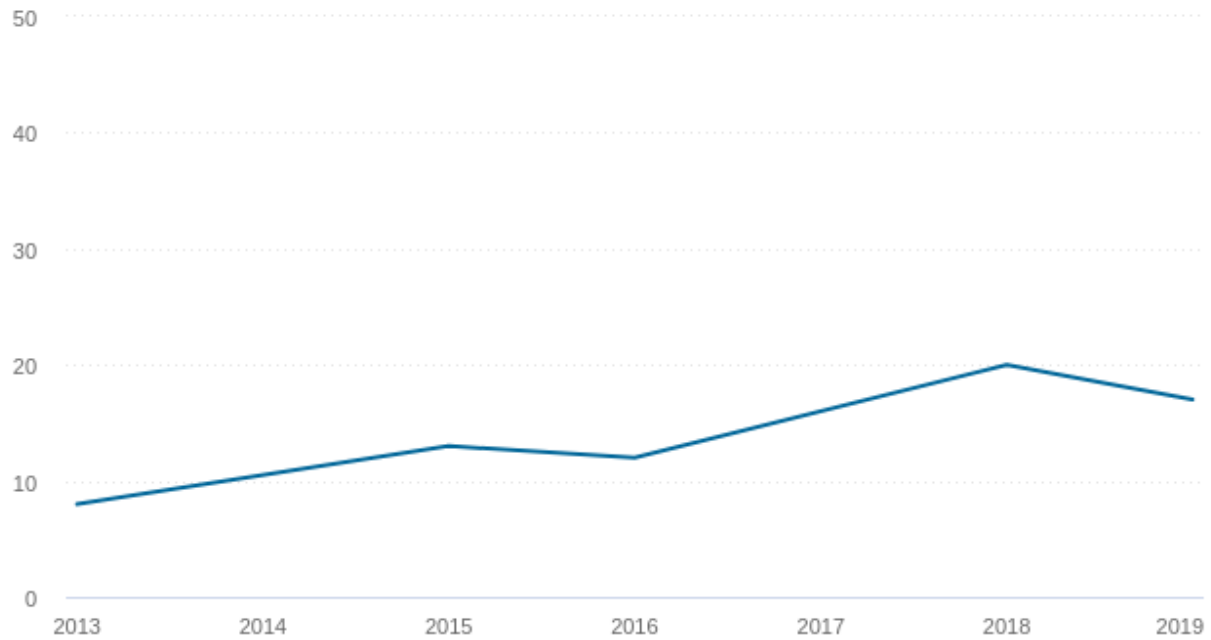
You may submit this report electronically and email to: Amanda.Scofield@deq.ok.gov using the Subject Line 'Annual Report' <https://www.deq.ok.gov/land-protection-division/recycling/computer-equipment-recycling/manufacturers-of-electronic-waste/>

You may mail this report to: Amanda Scofield
 Land Protection Division
 707 North Robinson, PO Box 1677
 Oklahoma City, OK 73101-1677
 (405) 702-5118

Figure 4: A sample of the updated Annual Reporting Guidance Document. The previous version of this document was created in 2012 and used through 2018.

Smartphone dependency

% of U.S. adults who do not use broadband at home but own smartphones

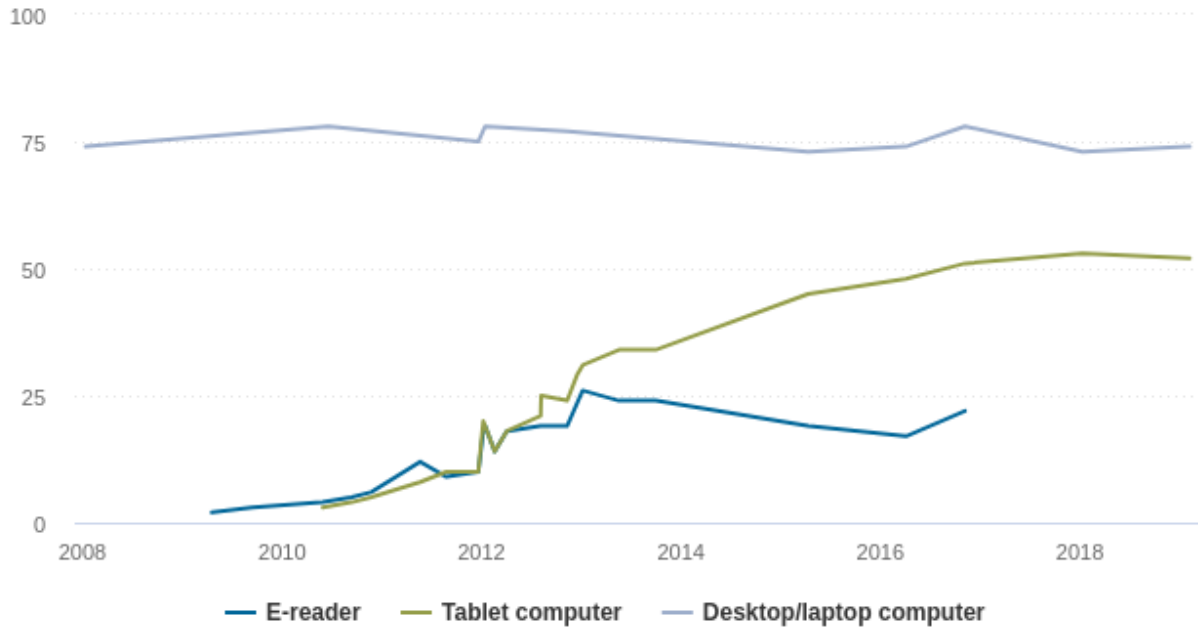


Source: Surveys conducted 2013-2019. Data for each year based on a pooled analysis of all surveys containing broadband and smartphone questions fielded during that year.

Figure 5: Smartphone dependency over time is gradually increasing, meaning less and less U.S. adults need a desktop or laptop computer.

Ownership of other devices

% of U.S. adults who own the following devices



Source: Surveys conducted 2008-2019.

Figure 6: The percentage of U.S. adults who own desktop or laptop computers versus the number of U.S. adults who own tablet computers over time.

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
Compliance Inspection Form:
Retailer Inspection CY19

The Oklahoma Computer Equipment
 Recovery Act
 O.S. § 27A 2-11-605
 Oklahoma E-Waste Recycling
 OAC 252:515-39

Inspection Date	
Facility Name	
Facility Address	
Facility Representative	Name/Title:
	Phone/Email:

Noncompliant Manufacturers:	
Last contact 2015 or before	Are covered devices by these manufacturers sold in store?
1. Azpen Innovation	
2. Chromo Inc.	
3. Double Power Technology, Inc.	
4. <i>Ematic</i>	
5. HKC Digital USA	
6. Mach Speed LLC	
7. MTM Trading LLC	
8. Russell Distribution	
9. Velocity Micro	
No Contact Last Year (2018)	
10. HTC America	
11. Igaming Enterprises LLC	
12. iRULU - USA 111	
13. NeuTab - Grand Electronics Inc.	
14. Nextbook USA	
15. Proexpress Distributors	
16. Visual Land, Inc.	

Figure 7: A sample of the newly created Retailer Inspection Form. Page two of the document is not shown.