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S T A N D A R D S

Energy Management Subcommittee

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**Cable Operator Recycling
Recommended Practices**

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1. Introduction

1.1. Executive Summary

The cable broadband industry depends on electronic equipment to enable the product and services delivered to the millions of subscribers around the world. This document identifies resources to help aid the cable operator in best disposal of end of life equipment.

1.2. Scope

The following outlines the recommended practices for the management of cable operator's e-scrap. The scope and primary objective is to ensure proper e-scrap management from both environmental and financial perspectives covering:

1. Guiding principle for electronic equipment end of life management
2. Best practices for proper recycling of electronic equipment
3. End of life electronic equipment financial models
4. Recommendations for data collection on electronic recycling that will provide industry trend information

1.3. Benefits

Proper handling of end of life equipment can benefit both the bottom line as well as the environment. For example, when dealing with failed or obsolete equipment, the cable operator has several choices on how to remove the property from the organization. The removal of the equipment should be approached with a strategic mindset to help optimize the total cost of ownership and environmental impacts.

1.4. Intended Audience

Network operations, critical facility managers, and inside plant employees responsible for materials leaving the network would benefit from this document.

1.5. Areas for Further Investigation or to be Added in Future Versions

None at time of publication.

2. Normative References

The following documents contain provisions, which, through reference in this text, constitute provisions of this document. At the time of Subcommittee approval, the editions indicated were valid. All documents are subject to revision; and while parties to any agreement based on this document are encouraged to investigate the possibility of applying the most recent editions of the documents listed below, they are reminded that newer editions of those documents might not be compatible with the referenced version.

2.1. SCTE References

- No normative references are applicable.

2.2. Standards from Other Organizations

- No normative references are applicable.

2.3. Published Materials

- No normative references are applicable.

3. Informative References

The following documents might provide valuable information to the reader but are not required when complying with this document.

3.1. SCTE References

- No informative references are applicable.

3.2. Standards from Other Organizations

- No informative references are applicable.

3.3. Published Materials

- No informative references are applicable.

4. Compliance Notation

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5. Guiding Principles For Electronic Equipment End Of Life Management

The overall guiding recycling principles for cable operators is to promote and maintain sustainable recycling standards that reduce our environmental impact, meet regulatory requirements and reduce operational expenses through resource conservation and waste reduction.

- Used equipment has value and risk
- Best practices/responsible recycling should be used in the disposition of used equipment
- The shared benefits of establishing an industry infrastructure to manage used equipment can provide optimized efficiency and value while maintaining compliance to existing and future regulations. Standard qualification requirements should be developed for the selection of industry service providers
- Industry volumes and trends of used equipment assets, especially those assets which could potentially be categorized as regulated waste streams at the state or federal level, should be tracked and reported
- “Green Procurement” should drive the selection and acquisition of new equipment that is more supportive of circular economy principles
- Each organization should develop its own plan based on the industry principles and practices
- Implementation requires a team approach – coordinating Operations, Finance and Support
- The cable telecommunications industry can show leadership by implementing an e-scrap/asset management strategy

6. Process For Recycling: R2 Reference

The “*Responsible Recycling (R2) Practices for Electronic Recyclers*”¹ is currently recognized as our go to model for adopting a sustainable e-scrap management system for cable owners/operators. The R2 standard outlines in detail 13 critical concepts that should be incorporated into the cable industry process for choosing a recycling solution provider:

- Environmental, Health, and Safety Management System
- Reuse, Recover Hierarchy of Responsible Management
- Legal Requirements
- On-Site Environment, Health, and Safety
- R2 Focus Materials
- Reusable Equipment and Components
- Tracking Throughput
- Data Destruction
- Storage
- Facility Security
- Insurance, Closure Plan, and Financial Responsibility
- Transport
- Recordkeeping

All local codes and regulations shall be adhered to when managing e-scrap. The cable operator should select e-scrap management partners that follow the R2 standard.

¹ Access the latest R2 reference: <https://sustainableelectronics.org/r2-standard>

Although, R2 is the go-to model, there are other certifications that exist, such as e-Steward.

7. Financial Modeling Of E-Scrap

The financial model is based on a risk/reward (financial payback) system. Operators have options when dealing with the end of life electronic equipment. Those choices are based on what is best suited to their administrative strategies. In the spirit of diverting waste, operators have four choices when dealing with surplus end of life electronic equipment.

These include:

- A. **Repurpose/ Reuse** equipment in cable operator footprint
Low Risk/Reward – no CAPEX to replace equipment. In addition, some equipment components may be redeployed, repurposed or sold as part of the end of life process.
- B. **Resale** of used equipment through auction, consignment, vendor or asset recovery
Low to High Risk – Original system owner travels with equipment/ Reward – financial payback based on equipment market conditions. Note: de-branding and removal of licenses should be considered prior to resale.
- C. **Recycling** (no reuse)
Low Risk/Reward – variable value based on commodity value
- D. **Destruction** of equipment containing electronic data
Low Risk destruction of equipment/Reward – no financial liability based on data leakage. This new scrap can now be recycled via traditional means since any privacy or confidential information has been destroyed.

8. Recommended Data Reporting

Introduction: The cable industry has developed a method for collecting electronics by R2 Certified electronics recyclers. The majority of equipment that has met end-of-life, surplus, or decommission status ends up with recyclers. The SCTE Standards Working Group for Recycling has determined there are multiple benefits to the collection of this data. The data should be compiled so the industry along with the cable providers has a point of reference to determine how much electronics are being recycled. Other industries have been scrutinized for their lack of green sustainable initiatives including the recycling of electronics.

- A. **Repurpose / Reuse:** The CAPEX avoidance may be quantified for management insight as well as to determine the amount of budget dollars that might be available for other initiatives.
- B. **Resale / Consignment:** Data points for e-waste should include OEM, model, serial number, quantity, weight, shipment date, sale/destruction date, proceeds and origin. Some states such as California require reporting by location from where the equipment was picked up. Consumables such as clamps and bolts do not require OEM, model or serial number details. Certificates of Destruction should be available for e-waste items.
- C. **Recycling / Destruction:** Data points for e-waste should include OEM, model, serial number, quantity, weight, shipment date, sale/destruction date, proceeds and origin. Some states such as California require reporting by location from where the equipment was picked up. Consumables such as clamps and bolts do not require OEM, model or serial number details. In addition, quantities may or may not be available for consumable. For example, the items may be placed into a recycling collection bin so the quantity of ground rods and nuts for example will not be available. Certificates of Destruction should be available for e-waste items. Refer to “Equipment Recycling List for the Cable Industry Appendix A.