

**AGENCY OF NATURAL RESOURCES  
DEPARTMENT OF ENVIRONMENTAL CONSERVATION  
WASTE MANAGEMENT DIVISION**

**PROCEDURE FOR THE ENVIRONMENTALLY SOUND MANAGEMENT  
OF ELECTRONIC WASTE FOR COLLECTORS, TRANSPORTERS,  
AND RECYCLING FACILITIES**

§ 1. AUTHORITY

This procedure is adopted under the Secretary’s authority pursuant to 10 V.S.A. § 7559(7)

§ 2. PURPOSE

It is the purpose of this procedure to:

- (1) Establish guidelines for the proper environmental management of electronic devices collected, transported, and recycled in the State of Vermont; and
- (2) Provide guidance on how to register as a collector, transporter, or recycler under Vermont’s electronic waste management law.

§ 3. DEFINITIONS

As used in this procedure:

- (1) “Accredited certifying body” means:
  - (A) For the Responsible Recycling practices (R2), a certifying body that has certified by ANAB as accredited to certify companies to the R2 Practices.
  - (B) For the E-Stewards standards, a certifying body that has been certified by ANAB as accredited to certify companies to the E-Stewards standard.
  - (C) For the Vermont Plus Recycling Standards adopted under § 6(f) of this procedure, a certifying body that meets the requirements of (1)(A), (1)(B), or a body approved by the Secretary.
- (2) “Banned electronic devices” means an electronic device banned from disposal in a landfill pursuant to 10 V.S.A. § 6621a.
- (3) “Collection” means the aggregation of electronic devices from covered entities and includes all the activities up to the time the electronic device is delivered to a recycler.

- (4) “Collector” means a public or private entity that receives electronic devices for the delivery of the devices to a recycler.
- (5) “Covered entities: means any household, charity, or school district in the state; or a business in the state that employs ten or fewer individuals.
- (6) “Disposal” means the discharge, deposit, injection, dumping, spilling, leaking, or placing of any solid waste or hazardous waste into or on any land or water so that such solid waste or hazardous waste or any constituent thereof may enter the environment or be emitted into the air or discharged into any ground or surface waters.
- (7) “Disassembly” means the dismantling of electronic device (1) for the purpose of marketing, reselling, reusing or recycling the components of electronic waste; (2) in a manner that is protective of human health and the environment; (3) without treating the device or any component thereof; and (4) without breaking the cathode ray tube. Disassembly includes the destruction of a hard drive (including shredding and crushing) in accordance with the National Association of Standards and Technology Guidelines for Media Sanitation, as may be amended. Disassembly does not mean the shredding, crushing, or otherwise treating the electronic devices or any component thereof that may contain focus materials, or that break the cathode ray tube in any electronic device.
- (8) “Electronic device” means a: computer; computer monitor; computer peripheral; device containing a cathode ray tube; printer; or television regardless of who deposits the device with the collector, transporter, or recycler. "Electronic device" does not include: any motor vehicle or any part thereof; a camera or video camera; a portable or stationary radio; a wireless telephone; a household appliance, such as a clothes washer, clothes dryer, water heater, refrigerator, freezer, microwave oven, oven, range, or dishwasher; equipment that is functionally or physically part of a larger piece of equipment intended for use in an industrial, library, research and development, or commercial setting; security or antiterrorism equipment; monitoring and control instruments or systems; thermostats; handheld transceivers; a telephone of any type; a portable digital assistant or similar device; a calculator; a global positioning system receiver or similar navigation device; commercial medical equipment that contains a cathode ray tube, a cathode ray tube device, a flat panel display, or similar video display that is not separate from the larger piece of equipment; or other medical devices, as the term "device" is defined under 21 U.S.C. § 321(h) of the Federal Food, Drug, and Cosmetic Act, as that section is amended from time to time.

- (9) “Electronic waste” means a: computer; computer monitor; computer peripheral; device containing a cathode ray tube; printer; or television sold to a covered entity. "Electronic waste" does not include: any motor vehicle or any part thereof; a camera or video camera; a portable or stationary radio; a wireless telephone; a household appliance, such as a clothes washer, clothes dryer, water heater, refrigerator, freezer, microwave oven, oven, range, or dishwasher; equipment that is functionally or physically part of a larger piece of equipment intended for use in an industrial, library, research and development, or commercial setting; security or antiterrorism equipment; monitoring and control instruments or systems; thermostats; handheld transceivers; a telephone of any type; a portable digital assistant or similar device; a calculator; a global positioning system receiver or similar navigation device; commercial medical equipment that contains a cathode ray tube, a cathode ray tube device, a flat panel display, or similar video display that is not separate from the larger piece of equipment; or other medical devices, as the term "device" is defined under 21 U.S.C. § 321(h) of the Federal Food, Drug, and Cosmetic Act, as that section is amended from time to time.
- (10) “Focus materials” means electronic waste or components of electronic devices that include any of the following components:
- (A) Polychlorinated biphenyls (PCBs);
  - (B) Mercury;
  - (C) Batteries;
  - (D) Cathode ray tubes (CRTs) and leaded glass; or
  - (E) Circuit boards, whether whole or shredded.
- (11) “Person” means any individual, partnership, company, corporation, association, unincorporated associations, joint venture, trust, municipality, the State of Vermont or any agency, department or subdivision of the state, federal agency, or any other legal or commercial entity.
- (12) “Recycler” means a person who accepts electronic devices for the purpose of recycling. A person who takes electronic devices solely for reuse, refurbishment, or repair is not a recycler.
- (13) “Recycling” means the process of collecting and preparing electronic devices for use in manufacturing processes or for recovery of useable materials followed by delivery of such materials for use. Recycling does not include demanufacturing

or destruction by incineration; waste-to-energy incineration, or other such processes; or land disposal.

- (14) “Refurbish” means to repair electronic devices to restore or improve it so that it may be used for the same purpose for which it was originally purchased.
- (15) “Reuse” means electronic device changes ownership and is used, as is, for the same purpose for which it was originally purchased.
- (16) “Transporter” means a person that moves electronic devices from a collector to a recycler.

#### § 4. STANDARDS FOR COLLECTORS

- (a) Applicability. These standards apply to a person that collects electronic devices.
- (b) Registration. A collector shall register with the Secretary by completing the form provided by the Secretary. If a recycler collects directly from a covered entity they do not need to register as a collector if they are registered as a recycler of electronic devices.
- (c) Prohibited activities. A collector is prohibited from the following:
  - (1) Disposing of any electronic device; and
  - (2) Initiating a shipment of electronic devices to any person, except the following:
    - (A) A destination within the United States, for reuse of whole devices that are functional and are used for the same purpose for which it was originally purchased.
    - (B) A facility in Vermont that is a registered recycler of electronic devices.
    - (C) An out-of-state recycling facility that is operated in accordance with that state’s laws and regulations.
    - (D) A foreign destination, provided there are no hazardous waste components that are a part of the electronic device.
    - (E) For electronics devices that may have a hazardous waste component, a foreign destination, provided the collector complies with 40 C.F.R. Part 262 Subparts E or H.
- (d) Facility management standards. A registered collector shall manage its facility(ies) located in Vermont in the following manner:

- (1) Access to the collection location shall be controlled at all times. An attendant shall be present to ensure that electronic devices are appropriately separated, to perform record keeping and to ensure that collection is conducted in accordance with this procedure during the hours of operation;
  - (2) Employees have been trained on the materials that can be accepted at the collection location, materials management standards in subsection (e) of this section, the record keeping required by subsection (f) of this section, and how to respond to releases from broken or poorly maintained electronic devices;
  - (3) The facility shall have a procedure in place to address releases from electronic devices; and
  - (4) The facility shall provide access to Agency personnel to inspect the facility, review any records, or conduct any other sampling or auditing to determine the proper operation of 10 V.S.A. Chapter 166.
- (e) Materials management standards. A registered collector shall manage electronic devices in a way that prevents releases from any electronic device, or component of an electronic device, to the environment. Registered collectors shall:
- (1) Store electronic devices on an impervious surface within a structure or transportation unit such that the electronic device is protected from precipitation. Outdoor storage is prohibited at any time;
  - (2) Maintain adequate storage space to accommodate periods of peak deliveries;
  - (3) Package electronic devices in a manner adequate to prevent breakage during transportation, storage, and handling. Such packaging must lack evidence of damage that could cause breakage under reasonably foreseeable conditions;
  - (4) Clean up broken and damaged electronic devices immediately. All clean-up materials and debris that may contain focus materials must be managed by placing them in a covered container that prevents the further release of the materials and, labeled as “electronic waste,” “used electronics,” or another term acceptable under the Vermont Hazardous Waste Management Regulations;
  - (5) Place any electronic device that shows evidence of breakage, leakage, spillage, or damage that could cause the release of glass particles or other constituents under reasonably foreseeable conditions in a container. Any such container shall be closed, structurally sound, and compatible with the electronic device and shall be capable of preventing leakage, spillage or releases from damaged electronic devices, glass particles or other hazardous constituents from such damaged waste to the environment;

- (6) A collector may not accumulate electronic devices for longer than one year from the date the electronic device is delivered to the facility by the generator;
  - (7) Containers, pallets, or packages containing electronic devices shall be clearly marked with the words “electronic waste,” “used electronics” or another term acceptable under the Vermont Hazardous Waste Management Regulations.
- (f) Recordkeeping and reporting requirements. Beginning August 1, 2012, and annually thereafter, all collectors shall annually report the following to the Secretary, on a form provided by the Secretary:
- (1) The types of electronic waste collected (e.g. computer, television, mouse, etc.);
  - (2) The amount of electronic waste, by weight, sent to a recycler from all covered entities during the preceding program year;
  - (3) The amount of electronic waste, by weight, that was collected under the standard plan, an approved manufacturer opt-out plan, or outside of an approved plan;
  - (4) The amount of electronic waste and banned electronic devices, by weight, that was collected from covered entities; and
  - (5) The amount of electronic waste, either by weight or number of devices that was removed at the point of collection for reuse or refurbishment.

## § 5. STANDARDS FOR TRANSPORTERS

- (a) **Applicability.** These standards apply to a person who transports electronic devices from a collector to a recycling facility or from a recycling facility to a recycling facility.
- (b) **Registration.** A transporter shall register with the Secretary on a form provided by the Secretary.
- (c) **Prohibited activities.** A transporter is prohibited from the following:
  - (1) Disposing of any electronic device; and
  - (2) Delivering electronic device to any person except the following:
    - (A) A facility in Vermont that is a registered recycler or collector;
    - (B) An out-of-state facility that is operated in accordance with that state’s laws and regulations;

- (C) A foreign destination, provided there are no hazardous waste components that are a part of the electronic device; and
  - (D) For electronics devices that may have a hazardous waste component, a foreign destination, provided the collector complies with 40 C.F.R. Part 262 Subparts E or H.
- (d) A transporter may consolidate collected electronic devices into a larger vehicle at a transfer facility certified pursuant to 10 V.S.A. § 6605 in accordance with the terms of that certification.
- (e) Materials management standards. A registered transporter shall manage electronic devices in a way that prevents releases from any electronic device or component of an electronic device to the environment. Registered transporters shall:
  - (1) Transport electronic devices in a transportation unit that is covered such that the electronic device is protected from precipitation and will remain in the transportation unit;
  - (2) Transport electronic devices in a manner to adequately prevent breakage during transportation and handling; and
  - (3) Clean up broken and damaged electronic devices immediately. All clean-up materials and debris shall be managed in accordance with the requirements of § 4(e)(4) of this Procedure.
- (f) Reporting requirements. Transporters that transport electronic waste outside the state shall report beginning August 1, 2012, and annually thereafter, to the Secretary on a form provided by the Secretary the amount of waste, by weight, and whether the electronic waste was collected under the standard plan or an approved manufacturer opt out plan or outside an approved plan.

## § 6. STANDARDS FOR RECYCLING FACILITIES

- (a) Applicability. These standards apply to a person that recycles, reuses, or refurbishes electronic devices within the state of Vermont or to recyclers operating under the State Plan or an approved manufacturer opt-out plan.
- (b) The only treatment allowed at a Vermont facility registered under this section is disassembly. A facility that undertakes additional treatment or recycling activities shall obtain a permit under either 10 V.S.A. § 6605 or 10 V.S.A. § 6606.

Note: A person who solely reuses, refurbishes or repairs electronic devices is not a recycler under this Procedure and is not required to register with the Secretary.

- (c) Registration. A recycling facility (recycler) shall register with the Secretary on a form provided by the Secretary.
- (d) Prohibited activities. A recycling facility (recycler) is prohibited from:
  - (1) Disposing of any electronic device. A recycler may initiate a shipment of parts that are not recyclable to a facility that is permitted or certified to accept those materials;
  - (2) Reusing or refurbishing any electronic device except when in compliance with §7 of this Procedure; and
  - (3) Initiate a shipment of electronic wastes to any person, except the following:
    - (A) Another in-state recycling facility that complies with all standards set forth in §6;
    - (B) An out-of-state recycling facility that is operated in accordance with that state's laws and regulations; or
    - (C) A foreign destination, shipped in a manner consistent with their facility management standards.
- (e) Facility management standards. During the 2011 program year, a recycler shall submit either a self certification or a certification by an accredited certifying body that the recycler conforms to either the Responsible Recycling Practices (R2) or the E-Stewards Standard. In the 2012 program year and for any new registration thereafter, a recycler shall submit a copy of a certification by an accredited certifying body that the recycler conforms to either the Responsible Recycling Practices (R2) or the E-Stewards Standard. Notwithstanding the requirements of either the E-Stewards Standard or R2, in no case shall the regulatory requirements of this Procedure be more restrictive than 40 C.F.R. Part 262 Subparts E or H.
- (f) Vermont E-Waste Recycling Standard. A facility that elects to obtain a certification under the R2 Practices shall also obtain a certification from an accredited certifying body that the recycler complies with the Vermont Procedure for the Environmentally Sound Management of Electronic Waste. The certification shall include the following:

Note: A recycler located outside of the State of Vermont who wishes to participate in the state plan or an opt-out plan may provide an alternative to this section for review and consideration by the Secretary. The alternative shall be written and shall describe in detail its facility management practices and regulations in place

in its state of jurisdiction that apply to the facility. This alternative shall demonstrate how the facility's standards are functionally equivalent or more stringent than the standards established by this subsection. If the Secretary, in writing, approves the alternative standards as equivalent or more stringent, then the out-of-state facility may utilize an alternative standard for their operations and have a third party certify to that alternative standard.

- (1) Releases. The Facility must have in place a written plan for responding to and reporting releases, accidents, spills, fires, explosions, and other similar events that pose risks to worker safety, human health, or the environment consistent with Section 7-105 of the Vermont Hazardous Waste Management Regulations. This plan shall be provided to local emergency responders;
- (2) Ban on certain disposal methods. Under no circumstance, shall an electronic device recycler utilize energy recovery, incineration, or land disposal as a management strategy for Focus Materials or equipment and components containing Focus Materials;
- (3) Downstream audits. An electronic device recycler shall confirm, through audits, or other similarly effective means approved by the Secretary, that each downstream vendor in the recycling chain to which requirement 5(e) of the R2 standards applies continues to conform to the requirements of that section for as long as it receives FMs directly or indirectly from the recycler. Audits performed under this Practice shall be performed once every three years. If a recycler determines that a downstream vendor no longer meets the requirements of 5(e) of the R2 standards, it shall cease using that downstream vendor;
- (4) Minimum insurance requirements. A recycler shall possess Comprehensive or Commercial General Liability Insurance including coverage for bodily injury, property damage, pollutant releases, accidents and other emergencies with coverage limits of \$1,000,000 per occurrence and an annual aggregate of at least \$2,000,000, exclusive of legal defense costs;
- (5) Closure plan. A R2 recycler shall develop a written plan for the proper closure of the facility; a closure plan shall be based upon the following closure requirements:
  - (A) A description of how final closure of the facility will be conducted;
  - (B) An estimate of the maximum inventory of electronic devices ever on-site over the active life of the facility and a detailed description of the methods to be used during closure, including, but not limited to methods for removing, transporting, treating, storing or disposing of all electronic devices; and

- (C) A detailed description of the steps needed to remove or decontaminate all harmful residues and contaminated containment system components, equipment, structures, and soils during closure including, but not limited to, procedures for cleaning equipment and removing contaminated soils, methods for sampling and testing surrounding soils, and criteria for determining the extent of decontamination necessary to satisfy the Secretary
- (6) Amendment of closure plan. The recycler may amend the closure plan at any time prior to the notification of partial or final closure of the facility. A recycler with an approved closure plan must submit a written request to the Secretary to authorize a change to the approved closure plan. The written request must include a copy of the amended closure plan for approval by the Secretary; the recycler must amend the closure plan whenever:
- (A) Changes in operating plans or facility design affect the closure plan; or
  - (B) In conducting closure activities, (unexpected events require a modification of the closure plan).
- (7) Cost-estimate for closure. The following are the minimum requirements to be considered when developing a cost estimate for the closure of a facility;
- (A) The estimate must equal the cost of final closure at the point in the facility's active life when the extent and manner of its operation would make closure the most expensive, as indicated by its closure plan;
  - (B) The closure cost estimate must be based on the costs to the owner or operator of hiring a third party to close the facility. A third party is a party who is neither a parent nor a subsidiary of the owner or operator;
  - (C) The closure cost estimate may not incorporate any salvage value that may be realized with the sale of electronic wastes, facility structures or equipment, land, or other assets associated with the facility at the time of closure; and
  - (D) The owner or operator may not incorporate a zero cost as electronic device might have an economic value.
- (8) Adjustments to closure cost estimates. During the active life of the facility, the recycler must adjust the closure cost estimate for inflation within 60 days prior to the anniversary date of the establishment of the financial instrument. For owners

and operators using the financial test or corporate guarantee, the closure cost estimate must be updated for inflation within 30 days after the close of the firm's fiscal year. The adjustment may be made by recalculating the closure cost estimate in current dollars, or by using an inflation factor derived from the most recent Implicit Price Deflator for Gross National Product published by the U.S. Department of Commerce in its *Survey of Current Business*. The inflation factor is the result of dividing the latest published annual Deflator by the Deflator for the previous year;

- (A) The first adjustment is made by multiplying the closure cost estimate by the inflation factor. The result is the adjusted closure cost estimate; and
  - (B) Subsequent adjustments are made by multiplying the latest adjusted closure cost estimate by the latest inflation factor.
- (9) Amendment to closure cost estimate. During the active life of the facility, the recycler must revise the closure cost estimate no later than 30 days after a revision has been made to the closure plan which increases the cost of closure. If the owner or operator has an approved closure plan, the closure cost estimate must be revised no later than 30 days after the Secretary has approved the request to modify the closure plan, if the change in the closure plan increases the cost of closure;
- (10) Allowable financial instruments. A financial instrument provided to the Secretary shall be in the form required by 40 C.F.R. § 258.74(b), (c), (e) – (h); and
- (11) Storage: Store electronic devices on an impervious surface within a structure or transportation unit such that the electronic device is protected from precipitation. Outdoor storage is prohibited at any time
- (g) Recordkeeping and reporting requirements. Beginning August 1, 2012, and annually thereafter, all recyclers shall annually report the following to the Secretary:
- (1) The types of electronic waste managed;
  - (2) The total weight of all electronic waste and banned electronic devices from covered entities;
  - (3) The total weight of electronic waste recycled during the preceding program year (and if any waste was collected directly from a covered entity at the recycling location that weight identified separately);

- (4) The amount of electronic waste, by weight, that was collected under the standard plan, an approved manufacturer opt-out plan, or outside of an approved plan;
  - (5) The amount of electronic waste, by weight, that was tested and removed for non-local reuse; and
  - (6) The amount of electronic waste, by weight, that was tested and removed for local reuse.
- (h) Record retention. A recycling facility must retain records for shipments, export, and records identified in subsection (g) for at least three years from the date a shipment of electronic devices, electronic devices for reuse, or components containing focus materials left, or was received at, the facility.

## § 7. REQUIREMENTS FOR THE REUSE OF ELECTRONIC WASTE

- (a) To redesignate an electronic device as reusable equipment and allow for its management as a commodity and not as a waste, the electronic device shall be tested by the person making the redesignation to ensure that the equipment can perform its key functions. The following are the minimum reuse testing standards for electronic devices to document the electronic device meets its key function, for use of diagnostic software, it is required the device pass the diagnostic test.
- (1) Laptops. Diagnostic software that indicates what functions are failing, such as hard drive, RAM or power supply failures. Make sure cooling fans are working. Batteries must be tested to meet requirements below for reuse. Mercury lamps must all be functional. No screen burn or scratches/damage.
  - (2) Batteries. Ensure that each battery is capable of holding at least 80% of its original capacity (and not simply that it will hold a charge).
  - (3) Desktop computers. Diagnostic software that indicates what functions are failing, such as hard drive, RAM or power supply failures. Make sure cooling fans are working. Batteries inside desktops meet the standard for batteries above.
  - (4) CRT Monitors. Diagnostic programs that test for color, contrast, pixels. Visual for screen burn and scratches. Must have cabling intact. If the device is going into the “semiknockdown market” in another country (to build a new device around a used cathode ray tube), the following must be accomplished prior to exporting only good tubes: all circuit boards and other focus materials must be removed from the device, and the CRT tube itself must be tested with a “Picture Tester/Restorer” and determined that it is a viable tube for reuse.

- (5) LCD Flat Screens (TVs and Monitors). Diagnostic software testing for color, contrast, pixels, etc., replace any bad backlighting, look for screen damage.
  - (6) Plasma Flat Screens. Diagnostic software testing for color, contrast, etc. Testing for lighting, screen damage.
  - (7) CRT Televisions. In addition to all necessary tests listed above for CRT Monitors, a refurbisher must ensure that any TV going into reuse is capable of receiving the type of broadcast signal (digital or analog) in use in the market where it will be reused.
  - (8) Printers. Wipe data on printer memories, print a test page successfully, make sure the paper feed is working, light carriage is fully functional, visual inspection for broken parts, clean inside and out, toner cartridge functional, provide full toner cartridge if part of the deal.
  - (9) Fax machines and Multifunctional Machine (e.g. Printer/fax/copier/scanner in one). Wipe data on printer memories, print a test page successfully, make sure the paper feed is working, light carriage is fully functional, visual inspection for broken parts, clean inside and out, provide full toner cartridge if part of the arrangements.
  - (10) RAM. Insert into test bench computers for testing functionality using diagnostic program.
  - (11) Circuit boards. Insert into test bench computers for testing functionality using diagnostic program.
- (b) Alternative electronic waste redesignation.
- (1) Recyclers may propose alternative methods to be used to redesignate electronic devices. An alternative redesignation proposal shall contain the following:
    - (A) Clearly identify the type of electronic devices or banned electronic devices covered by the alternative;
    - (B) Document the alternative process to be used;
    - (C) State how the alternative proposal assures that the management of the electronic devices within the state is at least as protective of human health and the environment; and
    - (D) State how the alternative proposal provides for a level of assurance that materials are properly managed.

- (2) Notice. The Secretary shall provide notice to the public by posting an alternative method on the Agency website for not less than 30 days and providing an opportunity for the public to provide written comment.
- (3) Alternative approval. The Secretary may approve, approve with conditions, or deny an alternative method proposed by a recycler. In making this decision the Secretary shall:
  - (A) Consider all comment from the public received under (b)(2);
  - (B) Ensure that the alternative is equivalent in protecting human health, the environment, and ensuring proper management of materials as the standard adopted under (a) of this section; and
  - (C) Ensure that the alternative is consistent with the purpose of 10 V.S.A Chapter 166, the State Standard Plan, and this Procedure.
- (4) Term of alternatives. An alternative approved under this subsection shall not be for more than three years.

By:  \_\_\_\_\_

Date: 3/16/2011

Justin Johnson, Deputy Commissioner  
Department of Environmental Conservation  
Agency of Natural Resources