

# Environmental Standards for Recycling Facilities

## Why Is Environmental Management for WEEE Important?

Ensuring the proper management of WEEE is important to everyone.

Manufacturers of electronic products are heavily invested in their technology and brand and want assurance that the programs and service providers managing their products at the end-of-life stage are considerate of environmental health and safety.

Consumers that purchase and use electronic devices and participate in WEEE collection schemes assume that their e-waste will be handled properly, without risk to human health or the environment.

Government wants to ensure that domestically produced e-waste is recycled in an environmentally sound manner consistent with policies, regulations, and international agreements.

Finally, processors and recyclers of electronic products and scrap materials count on fair operating requirements, which protect workers, promote innovation, and foster a competitive marketplace.

## What Do These Standards and Certifications Cover?

Today, there are a number of end-of-life operating standards for electronics processors. Some are voluntary certification programs while others are built into new legislation. These standards set a base level for operations, for areas that include environmental, health, and safety management systems (EHSMS); legal requirements; data security; emergency planning and response; audit requirements; and environmental, health, and safety controls for collection, treatment, and logistics downstream and for the full chain of custody management. These standards may also establish acceptable markets for final disposition and downstream processing—usually guided by federal and international regulations and conventions on the international flow of e-waste.

It is important to note that these standards and certifications are not static. As a consequence of

regulatory, economic, and technological dynamics, as well as our evolving understanding of the toxins involved in the production of WEEE, they are in a constant state of adjustment and revision.

## Canadian Standards for WEEE Management

Over the last two decades, electronic primary processors have been setting up facilities in Canada. Some facilities manage large volumes of material using large high-tech mechanical separation equipment while others offer manual refurbishment and disassembly.

The Recycler Qualification Program (RQP) for EOL electronics recycling has been developed for Canadian electronics stewards as the operating standard for their service providers.<sup>5</sup> The Recycling Qualification Office (RQO) operates under Electronic Products Recycling Association (EPRA), a national, non-profit entity created by Canada's electronics industry to develop a set of operating standards for Canada's industry-led extended producer responsibility programs. The RQO manages all recycler assessments and approvals for the regulated provincial programs and uses the RQP as its governing base standard.

## How does Canada compare?

In December 2012, the International Sustainable Development Foundation commissioned a report by Arcadian Solutions aimed at better understanding how leading certifications and standards for WEEE processing met the e-waste management standards of the IEEE (Institute for Electronic and Electrical Engineers). The IEEE's 1680-series is considered the de facto standard for sustainable desktop computers and serves as the verification requirement for the Electronic Product Environmental Assessment Tool (EPEAT) used by manufacturers.

In an easy-to-follow format, the report outlines key elements of the standards and describes implementation and certification programs, providing a concise description of how each standard compares with the IEEE 1680 end-of-life processing requirements.

<sup>5</sup> Electronics Product Stewardship Canada, *Recycler Qualification Program for End-of-Life Electronics Recycling*, October 27, 2010, [http://www.rqp.ca/ESW/Files/Recycler\\_Qualification\\_Program\\_FINAL\\_10.10.27.docx](http://www.rqp.ca/ESW/Files/Recycler_Qualification_Program_FINAL_10.10.27.docx);

The findings show that Canada's RQP has, in most cases, met similar minimum criteria as international standards such as WEEELABEX (Europe), e-Stewards (Standard for Responsible Recycling and Reuse of Electronic Equipment, USA/OECD), and R2 (Responsible Recyclers, USA). However, RQP does not require a certified management system, as do the e-Stewards and R2 standards. In the case of WEEELABEX, the standard is embedded in the legislative text.

In sum, the comparison presented by Arcadian Solutions offers valuable insight into what kinds of improvements can be made to Canadian processing requirements, existing regulatory targets, and program requirements.

Our interviews with Canadian operators and primary processors indicate that, in general, the RQP is considered a good standard on paper, with room for continuous improvement. Most processors agree that these standards have helped them develop a system for better communication with employees, assisted with training, added layers to data tracking and reporting, and informed them about downstream markets and due diligence expectations. However, the audit to certification process of the RQP has been shown to be lacking in some areas, for example, approving downstream vendors without an on-site audit.

## **Standard Certification and Verification**

Stakeholders also agree that standards play a vital role in the establishment of best practices and should be overseen by government or a third party. In an effort to avoid the proverbial “fox in charge of the hen house,” all auditors and standard development and certification bodies should be independent with public reporting.

Most regulated Canadian WEEE programs (except those in Alberta) approve the standards offered by RQO as part of their stewardship plan, which means that, ultimately, stewards are in control. Alberta is the only province that registers its processors and audits their facilities using third-party auditors.

Further complicating the picture of Canada's existing operating standards is the fact that e-waste managed outside of a provincial stewardship program—for example, the imported and commercial e-waste that finds its way to Canadian operations—is governed only by a set of rules outlined in provincial and federal laws, which vary by province.

Certification programs offer a formal management system, which is continually verified and independent. Such a system is a useful measure to include in any provincial legislation, as it offers legislators the assurance that operators managing their material are adhering to a high standard.

The “Annual Corporate Declaration Criterion” (section 4.6.2.1 of IEEE 1680 series) provides an example of text that attempts to ensure independence and transparency in the system:

In jurisdictions where the manufacturer has control over the choice of initial service providers, the manufacturer shall ensure that all equipment collected ... is managed by initial service providers that are certified on an ongoing basis to a qualified recycling standard by independent certification bodies. These certification bodies shall be accredited by an IAF [International Accreditation Forum] member accreditation body to certify to the specific qualified recycling standard.<sup>6</sup>

## **Auditing**

Auditing must be on site, informed, and performed on a regular basis. The scheduled audits should be augmented with a series of spot audits. These unscheduled visits will foster a greater level of compliance to the requirements. All incoming and outgoing material must be accountable to a mass balance check. Qualified auditors familiar with the particular complexities and challenges of WEEE are required.

## **Reporting**

Mass-balance reporting necessitates a complete accounting of all incoming and outgoing WEEE (for reuse, recycling and EfW) at least twice a year, if not monthly. The mass-balance approach goes one step further than material tracking because it requires balancing all inputs and outputs and provides an opportunity for reconciliation to ensure that no WEEE is unaccounted for. Mass-balance reporting can also be a very useful tool for auditors, who can select loads randomly and track their destinations and associated documentation upstream and downstream. For these reasons and because of its usefulness in demonstrating compliance to program requirements, mass-balance reporting should be a program prerequisite in all Canadian provinces.

<sup>6</sup> Institute of Electrical and Electronics Engineers, *IEEE Standard for Environmental Assessment of Televisions* (New York: IEEE, October 2012), 1680.3-2012, section 4.6.2.1.

## Downstream Processors

Secondary processors and converters are also known as "downstream" processors. These are the facilities at the end of the recycling chain that receive used or end-of-life electronic equipment, components, or materials from a primary processor or other secondary processors for the purpose of additional processing or disposition.

Downstream processors include entities that bulk and blend, shred and separate, process materials into new products, and process materials to recover metals, energy, or other resources.

Industry and media reports of substandard downstream WEEE operators in developing countries such as Africa, India, China and Pakistan continue to emerge on a regular basis. For primary processors and program operators, weaker environmental regulations and monitoring in other parts of the world make it difficult to weed out the legitimate operators from the bad operators who exhibit little consideration for health and safety and environmental protection.



## Due diligence

Given the concerns just outlined, due diligence in the selection of downstream processors by primary processors is critical, and diligence must continue to the final resting place of the material (e.g., to its use directly in the manufacturing of a new product). Although performing due diligence is the responsibility of both the primary processor and the program operator, the level of due diligence carried out by each may vary. Consequently, requirements and expectations should be clearly outlined in the standards and leave little room for interpretation.

As an example, e-Stewards (the US certification standard) specifies a documented system of direct controls for all e-waste shipped to downstream processors. It includes specific requirements such as initial due diligence prior to shipping materials, on-site audits of downstream processors, random sampling of shipments over a minimum length of time, verification that intermediaries are directing shipments to approved destinations, and the provision of full transparency to all customers. Most standards and certifications also require certified or trained auditors to perform audits in accordance to the standard.

