
POTENTIAL CRITERIA FOR A VOLUNTARY CONSENSUS SUSTAINABILITY STANDARD FOR ELECTRONIC PRODUCTS IN INDIA

*Informal sector capacity building to promote sustainable end-of-life
management of IT equipment in India*

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**A joint collaboration between
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Background and Context

The Green Electronics Council (GEC), in partnership with the Centre for Responsible Business (CRB) and in consultation with stakeholders, is exploring the development of a capacity building standard to promote sustainable end-of-life management of IT equipment in India.

IT product sustainability standards exist internationally, and have been shown to move the industry sector towards more sustainable practices across different global markets. However, existing global IT product sustainability standards were largely developed to reflect the end-of-life (EoL) management infrastructure and workforce challenges faced by countries such as the United States and within the European Union. As a result, emerging economies, including India, lack a blueprint for managing EoL electronics that can easily be applied to their market and regulatory circumstances. Thus, in India, an opportunity exists to create an IT sustainability standard tailored to its unique circumstances and challenges, including its regulatory structure for managing e-waste based on extended producer responsibility principles and its large presence of informal e-waste workers that manage over 90% of India's e-waste.

Such an IT product sustainability standard for India could include 'capacity building' criteria to strengthen efforts by key market and regulatory actors to improve EoL e-waste management. The proposed draft capacity building criteria presented in this document aim to reflect the priorities and challenges within India for responsibly managing electronics at end-of-life while explicitly seeking ways to strengthen and formalize engagement by the informal sector.

Definition of 'capacity building': In this context, 'capacity building' aims to strengthen capabilities among informal workers and formalizing their operations. However, it can also refer to building capacity among producers to enhance their collection and recycling efforts and other stakeholders and institutions, such as government regulatory bodies, whose involvement is necessary to foster safe and robust electronics recycling infrastructure.

Envisaged Uses

These draft criteria could be incorporated into an India-specific IT product sustainability voluntary consensus standard (VCS) that addresses several aspects of sustainability, not only end-of-life management. It is envisaged that this type of standard would be developed through a multi-stakeholder consensus process based in India, and after completion could be used as a purchasing tool by Indian government and institutional purchasers in specifying IT products.

Building on Previous Research

The draft criteria proposed here outline potential capacity building opportunities related to end-of-life management following insights gained from a series of in-depth interviews with key stakeholders in 2017 and 2018, including producers, government officials, producer responsibility organizations, NGOs, multilateral organizations, and academic institutions. Discussion with the stakeholders revealed that key challenges or gaps in end of life management of electronics exist pertaining to implementation of the current E-Waste Rules, infrastructure, and knowledge across all key market stakeholders.

The findings of the previous research can be found in two GEC-CRB reports published in October 2018:

- [Capacity Building Opportunities and End of Life Management Criteria for a Voluntary Consensus Standard Report](#)
- [Gap Analysis on Responsible E-Waste Management Efforts in India](#)

Role of a Voluntary Consensus Standard vs. Role of Regulatory Standards

The criteria propose measures that go beyond safety requirements in recycling facilities, maintenance of e-waste management records, and monitoring of government-registered recycling facilities and Producer Responsibility Organizations (PROs). Criteria in a VCS could strengthen producer compliance and government enforcement efforts. Moreover, bulk consumers could use a VCS in their procurement efforts to reward voluntary action by producers. A VCS could also more explicitly link producers' e-waste management efforts to the Sustainable Development Goals (SDGs).

Proposed Draft Criteria

The proposed draft criteria for a VCS proposed below reflect actions and initiatives within the producers' control since the VCS would be tied to products that producers sell in India. Though other stakeholders play an integral role in ensuring sound e-waste management, their efforts may best be captured via other capacity-building initiatives. The draft criteria, per Figure 1, address:

- 1) Supporting informal sector engagement and ensuring that e-waste is channeled into safe EoL processing
- 2) Building capacity among informal workers
- 3) Improving quality of public disclosure of e-waste management
- 4) Encouraging refurbishment and reuse to improve circularity and resource efficiency
- 5) Improving awareness on producers' collection and recycling among bulk consumers and households
- 6) Improving circularity and resource efficiency by fostering or supporting innovation (e.g. helping to facilitate technology transfer to informal workers for valuable and safe materials recovery)

The draft criteria highlight which key challenges are addressed, which SDGs are most relevant to the specific criterion.

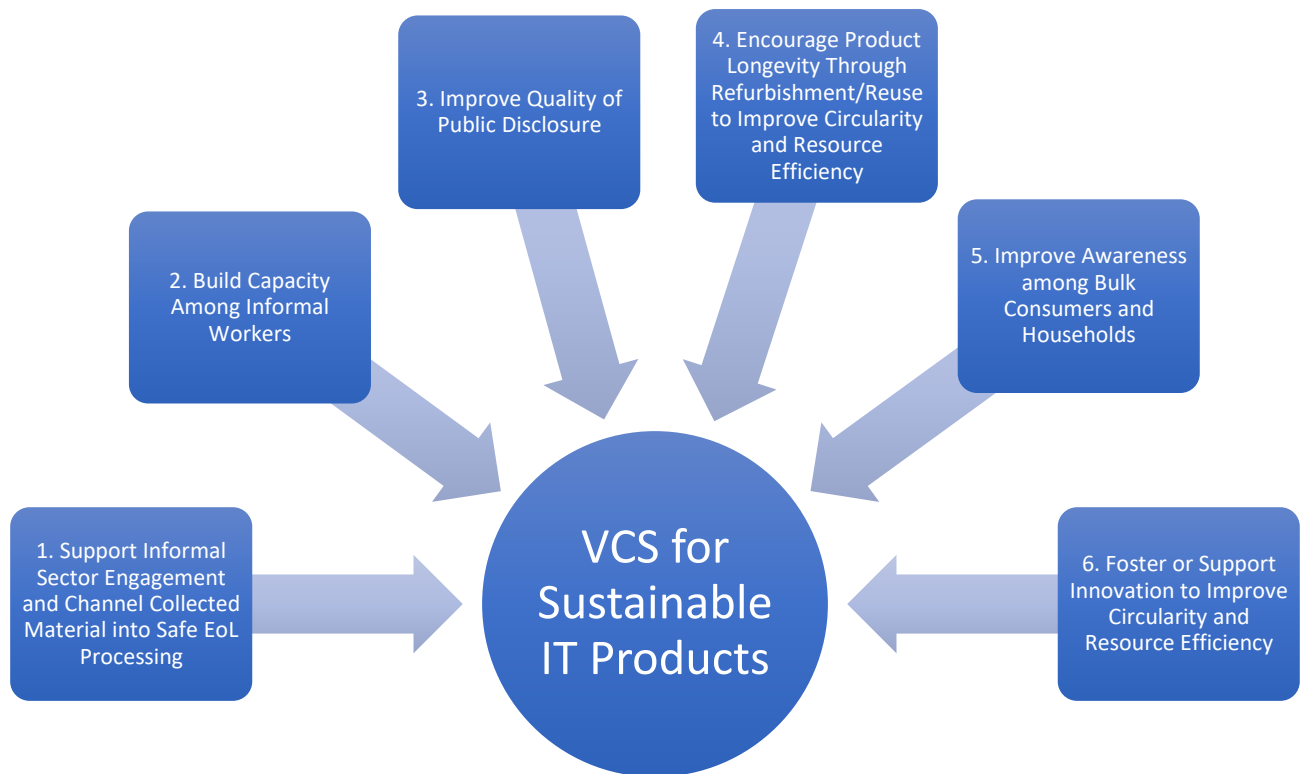


Figure 1. Proposed criteria for a VCS for Sustainable IT products

1. Proposed Criterion to Support Informal Sector Engagement and Channel Collected Material into Safe EoL Processing

Challenge: Collecting Material from the Informal Sector

It is estimated that, in India, over 90% of e-waste is collected by the informal sector. For producers to meet their recycling targets under India’s 2016 E-Waste Rules, they will almost certainly need to engage with the informal sector collectors. Several barriers exist to successfully linking producers’ EPR programs and the informal collection sector. The most current E-Waste Rules do not address how producers should, or could, engage the informal sector, such as engaging with centers run by NGOs, or formalized informal sector organization or associations. Additionally, the Rules do not provide a mechanism for authorization of the informal sector nor provide guidance for working with informal sector workers that may choose not to formally organize themselves. The informal sector typically does not have the capacity to approach the manufacturers and seek authorization for collection on their behalf, however this is changing as PROs begin working with the informal sector to collect material for their producer clients’ compliance targets.

At this time, new ideas are being tested on the ground to work with the informal sector and to find mechanisms for tracking collected material to ensure that it is safely recycled. As PROs and NGO-led collectives gain more experience working with informal collectors and dismantlers and direct material to safe EoL processing, various models for engaging the informal sector are emerging for manufacturers to support and leverage, building on pilot lessons from previous years supported by government, NGO and international donor agencies.

A criterion that requires manufacturers to work, directly or indirectly, with informal sector collectors through PROs and NGO-led collectives (or other models of engagement) could help overcome these barriers. Since informal sector recyclers offer higher prices to the informal collectors, informal collectors have a disincentive to work with the formal recyclers. However, a guaranteed steady stream of income from working through a producer-supported third party (e.g. PRO or NGO-led collective) could provide some informal workers with enough incentives to cease working with, or reduce the amount of business they do with, informal recyclers.

Proposed Criterion 1 – *The Producer’s Extended Producer Responsibility (EPR) program shall:*

- *Collect a minimum of x% of its annual recycling of e-waste target from informal collectors, aggregators, and dismantlers*
- *Channel the material to formal authorized recyclers for processing following the E-Waste Rules (revised 2018)*
- *Include traceability when obtaining material from informal collectors and, where applicable, evidence that dismantlers and recyclers are adhering to E-Waste Guidelines. Traceability shall include both records of financial transactions and mass balance flows from point of collection to the final stage end of life processing from each actor in the e-waste value chain.*

Producer shall participate in any system-wide reporting scheme that tracks mass balance and financial flows, if it is available.

EPR programs may collect material from individual informal workers or from collection centers or initiatives led by NGOs or other third-party organizations that create a platform for informal workers to collect and aggregate e-waste.

SDG Linkage (Goal 8, Target 8.2) - Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high value added and labor-intensive sectors.

SDG Linkage (Goal 12, Target 12.5) - By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse.

2. Proposed Criterion to Build Capacity Among Informal Workers, includes Integrating and/or Formalizing Informal Collectors, Aggregators and Dismantlers

Challenge: Training, educating and providing direct technical assistance to formalize informal sector collectors, aggregators, and dismantlers.

Background: In addition to some of the items highlighted above, the informal sector collectors, aggregators and dismantlers face other barriers including lack of business development skills, lack of access to capital, lack of understanding of regulations and environmental and occupational health and safety requirements or best practices, and lack of experience developing partnerships with manufacturers. As relayed by several stakeholders, including informal workers themselves, even when informal workers are aware of hazards involved in e-waste handling, they need economic incentives to adopt safe management practices. Many informal workers seek to strengthen their business development skills to grow and expand their collection and dismantling practices.

In addition to working with informal collectors, PROs are finding the need to engage informal aggregators, especially smaller aggregators, for purchasing e-waste for recycling on behalf of producers. Given most e-waste collection, aggregation and trading is managed by the informal sector, aggregators often have more negotiating power than do PROs and producers. Therefore, the criteria below are intended to provide producers and PROs or NGO-led collectives (or other models) with flexibility in how they want to build capacity among informal workers, potentially as a way to strengthen incentives for informal workers to do business them.

Certain informal sector interventions may not pertain directly to e-waste management, but nonetheless facilitate transparent engagement of informal workers and help 'formalize' informal workers, such as establishing digital bank accounts or their GST tax identification. Informal e-waste workers would benefit from training, education, capacity building on topics including, but not limited to:

- Overview of e-waste and current status of e-waste generation in India
- E-waste Management Rules, 2016, and impact on informal workers
- Environmental and occupational health and safety
- Collection of e-waste, act as collection agent/collection points on behalf of authorized recycler or producer
- Soft skill training program
- Business plan development
- Digitizing financial assets (setting up bank accounts)
- Establishing tax identification
- Monitoring and evaluation
- Other skills as needed

To help build such capacity among informal workers, producers' EPR programs could partner with organizations (either PROs, NGOs, a combination of both, or other third-party efforts) with established achievements and experience working with the informal sector. Thus, the criterion below proposes basic criteria for producers to select third-party partners with demonstrated skills and accomplishments in engaging informal sector workers. In May 2018, the Central Pollution Control Board established registration requirements for PROs; however, the requirements are broad and do not outline required competencies for PROs seeking to engage informal workers (nor do the e-waste Rules provide guidance to PROs to engage the informal sector).

Proposed Criterion 2 – *The producer shall either directly, or through a third-party organization (e.g. PRO, NGO), provide training and education and/or direct technical assistance to informal collectors, aggregators and dismantlers. The training and education shall include topics such as the E-Waste Management Rules (2018), environmental and occupational health & safety issues, requirements for collecting, storing, and dismantling e-waste, soft skills (e.g. communication), business development. Direct technical assistance can include assisting workers in completing required e-waste management tracking paperwork, helping them acquire a GST Tax ID, digitizing their engagement in e-waste via establishing bank accounts, assisting in monitoring and evaluation, and/or other relevant technical assistance as needed.*

If the producer partners with a third-party entity (e.g. a PRO or NGO) to provide training, education and technical assistance to informal workers, the partner organization shall have demonstrated skills and capacity to engage informal workers (e.g. documentation of several years of experience organizing waste pickers and demonstrated results).

Producers shall have annual metrics documenting how they, or partner organizations, have engaged informal workers on building capacity around e-waste collection and dismantling (e.g. number of informal workers trained on e-waste hazards, number of informal workers with digitized bank accounts, number of informal aggregators who expanded their businesses, etc.).

SDG Linkage (Goal 8, Target 8.2) - Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high value added and labor-intensive sectors.

SDG Linkage (Goal 8, Target 8.8) - Protect labor rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment. online material via mobile devices?

3. Proposed Criterion to Improve Quality of Public Disclosure

Challenge: Promotion and Public Disclosure of Achievement, Connection to Broader Sustainability Goals

Implementation and enforcement of the 2016 E-Waste Rules is dependent on the Central Pollution Control Board (CPCB) and the State Pollution Control Boards (SPCBs) limited resources. Increased transparency and reporting by producers on their collection and recycling achievements would assist the CPCB and SPCBs but also signal to other producers examples of leadership in corporate reporting.

In addition, providing this information to the public would showcase producers that are in compliance with the E-Waste Rules, would demonstrate how producers are going beyond regulatory compliance in their e-waste management programs, and promote progress and support education of bulk consumers and households. This information could also be included in producers' annual corporate sustainability reporting and tied to broader sustainability-related efforts, thus framing e-waste management as part of a comprehensive approach to create more sustainable electronic products.

Proposed Criterion 3 – *Producers shall make the following information publicly available on their website or on a website of a public reporting initiative:*

- *Summaries of their approved EPR plans*
- *Total annual amount of e-waste collected through the EPR program*
- *Annual achievement towards E-Waste Rule (2018) threshold and which amounts of e-waste collection exceed regulatory requirements*
- *Percentage of e-waste:*
 - *Reused/refurbished*
 - *Recycled*
 - *Disposed & used for energy recovery*
- *Explanation of how e-waste management efforts:*
 - *Support the producer's efforts to promote Sustainable Development Goals, circular economy principles, and/or other environmental or sustainability-related priorities, goals, and initiatives.*
 - *Incorporate the hierarchy of management of e-waste that prioritizes reuse and refurbishment, then materials recovery, followed by energy recovery and lastly disposal*

SDG Linkage (Goal 12, Target 12.5) - By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse.

SDG Linkage (Goal 12, Target 12.6) - Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle.

4. Proposed Criterion to Encourage Product Longevity Through Refurbishment/Reuse to Improve Circularity and Resource Efficiency

Challenge: Offer Bulk Consumers Takeback Services for Product Refurbishment/Reuse and EoL Management

In India, consumers anticipate that their EoL electronics have value and expect compensation. This expectation to receive payment from collectors puts pressure on the collectors to favor selling to downstream informal recyclers who can typically offer a higher price than the formal recyclers. Education on responsible management of e-waste and behavior change campaigns are needed to shift consumer perspective and transition consumers expectation to getting paid less, or not at all, for EoL electronics.

As a first step, a criterion that requires producers to assist in educating bulk customers, as well as requiring the EPR program to incorporate the hierarchy of waste management could assist in addressing this issue, especially since bulk consumers' equipment represent significant volumes of used electronics that could be refurbished into the secondary market. This proposed criterion intends to foster new business models, or to help mainstream emerging business practices, to take back electronic products that are both financially beneficial to bulk consumers and to producers.

Proposed Criterion 4 – *The producers' EPR program shall:*

- *Include an offering to bulk consumers to return used electronic products (e.g. buy back products or incorporate a deposit refund scheme)*
- *Provide information to their bulk customers on the environmental benefits of reuse and refurbishment of e-waste*

SDG Linkage (Goal 12, Target 12.5) - By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse.

5. Proposed Criterion to Improve Awareness among Bulk Consumers and Households

Challenge: Consumer/ User Awareness

Many consumers, both individual and bulk consumers, are not aware of producers' EPR programs, and how to utilize the programs. In 2014 and 2015, the NGO Toxics Link issued its reports *Time to Reboot I and II*, which found weaknesses in producers' awareness raising efforts on their recycling programs with minimal engagement with bulk consumers and households.

By providing the public with easily accessible information, producers can drive collection of e-waste to their EPR programs. This proposed criterion is designed to help shift bulk and household consumer perceptions and to advance improved reuse and recycling.

Recently, in the May 3, 2018 IFC workshop, the CPBC expressed its desire to see producers undertake more robust awareness raising efforts, which are required under the E-waste Rules. However, no awareness-raising guidance or requirements are outlined in the Rules.

Proposed Criterion 5 – *Producer shall inform bulk and household customers of their Extended Producer Responsibility (EPR) program and how utilize the program to recycle the product at end of life. The information shall:*

- *Include options for utilizing partner collection programs (e.g. collection centers run by NGOs and/or formalized informal organizations or associations)*
- *Be provided with the product at retail point of sale (online or in-store) and on the producer's public website*

Producer shall:

- *Develop and implement, either independently or as part of a consortium, public education campaigns covering topics including but not limited to:*
 - *EPR programs*
 - *Responsible management of end-of-life electronics*
 - *Environment and human health impacts of e-waste*
- *Report annual awareness-raising metrics documenting their public reach (e.g. number of products labelled with reuse/recycling options; number of unique visitors to producers' website; number of media impressions from producer's individual public outreach efforts; number of partnerships and awareness-raising campaigns in which producer participated and number of people engaged and/or media impressions).*

SDG Linkage (Goal 12, Target 12.8) - By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature.

6. Proposed Criterion to Support or Foster Innovation to Improve Circularity and Resource Efficiency

Challenge: Advance Technology Transfer to Improve Recovery of Valuable Materials within India

Given the focus on materials security by Niti Aayog,¹ the National Institution for Transforming India (a government entity), an opportunity exists for stakeholders to discuss how policy makers can help foster better extraction of valuable materials from e-waste and better ways of ensuring resource efficiency. Most formal, registered recyclers offer dismantling services, not metals processing capabilities, which would require substantial capital investments. With a recent stay on waivers to export PCBs to overseas smelters for processing in 2018, formal recyclers have been more restricted on where they can sell their material, which has resulted in a greater supply of material to informal recyclers. Two PROs also confirmed that material was being leaked back into informal channels by formal recyclers; doing so proved lucrative and enforcement of the Rules and tracking of e-waste flows is still weak.

Government and multinational institutions have explored different ideas to strengthen environmentally safe EoL metals extraction, especially ones involving informal workers, and to create stronger linkages between scrap markets to improve domestic resource efficiency. MEITy and others have explored how to bring small-scale technology into the informal sector. Other proposals endorse development of eco-parks to foster recycling economies of scale across different scrap-intensive industries.

There could exist an opportunity for producers to help foster market conditions whereby they may benefit from increased metals (and other valuable materials) if they were to shift production and materials sourcing into India. Per Niti Aayog's focus on improving materials security to enhance India's production capabilities, given its initiative with the EU to explore improving resource efficiency, there might exist an opportunity for producers to benefit from such efforts, especially for producers seeking to manufacture goods in India. To this end, the Indian government's Make in India campaign² seeks to transform India into a global design and manufacturing hub, to where keeping critical material from recycling goods in-country may continue to be a growing area of focus. Domestic or global electronics manufacturers interested in sourcing material from within India could, over the longer term, find it appealing to invest in sound recycling solutions if doing so guarantees a high-quality raw material input.

Some solutions, such as MEITy C-MET lab's tabletop e-waste recycling solution, are ostensibly ready for field testing, however, viable financial models have not yet been developed. Could producers help foster or otherwise finance technology transfer solutions to improve recycling

¹ Niti Aayog. NITI Aayog and EU delegation to India release the Strategy on Resource Efficiency (RE), November 30, 2017. Available at <http://pib.nic.in/newsite/PrintRelease.aspx?relid=174013>

² <http://www.makeinindia.com/about>

techniques that reduce harm to the environment and human health. Which solutions could be used by informal recyclers and help transition them to the formal sector?

Proposed Criterion 6 – Foster or Support Innovation to Improve Circularity and/or Resource Efficiency: *Producer shall support or foster an innovation that improves circularity and/or resource efficiency and could be employed in the informal sector.*

Examples include:

- *Support efforts that improve the use of new or established processing technologies to extract valuable metals, plastics, or other materials into a raw material input in a manner that safeguards human health and the environment*
- *Foster transfer of such technologies to the informal sector to improve EoL recovery practices*
- *Procure recycling services from entities using such new processing technologies*

SDG Linkage (Goal 8, Target 8.2) - Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high value added and labor-intensive sectors.

SDG Linkage (Goal 12, Target 12.5) - By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse.

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