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SERI 2018 Strategic Plan

February 8, 2018

THE URGENT NEED FOR ACTION

The technology boom of the past three decades and the rapid expansion of the internet have improved the lives of billions of people. As a result, many more people around the world have unprecedented access to information, healthcare, education, banking and other means of achieving a higher standard of living.

However, these social benefits come with significant environmental, health and safety challenges. According to the United Nations' Institute for the Advanced Study of Sustainability, more than 46 million tons of e-scrap were produced worldwide in 2014, but only 15 percent was properly recycled.¹ Improper recycling and disposal of electronics have contributed to toxic dumps, open air burning of toxic materials and other unsafe practices that harm workers, communities and the environment on a grand scale.

In addition, these dangerous practices often squander much of the recyclable resources contained in discarded electronic equipment. A United Nations University report estimated the monetary value of recoverable materials in electronics discarded during 2014 alone at \$52 billion.² Consider the cumulative value of this lost opportunity year after year.

Also of increasing concern is the critical issue of data security. Many types of electronic equipment hold financial and other data that could be exploited to their detriment if the data is not properly destroyed.

Used and end-of-life electronics are a relatively new source of both potential value and harm for society. The problems are multi-dimensional (including political, technological, economic, environmental, and sociological) and dynamic. Solutions, of various sorts, are needed across the entire universe of those who deal with used and end-of-life electronics, including all types of companies – and individuals – that handle used and end-of-life electronics in all regions of the world.

¹ https://collections.unu.edu/eserv/UNU:6143/step_annual_report_2015_2016.pdf.

² <https://unu.edu/news/news/ewaste-2014-unu-report.html>

SERI's VISION

Responsible management of used and end-of-life electronics everywhere.

SERI's MISSION

SERI works to create a world where electronic products are reused and recycled in a way that results in resource preservation, the well-being of the environment, and the health and safety of workers and communities.

PRINCIPLES THAT GUIDE SERI'S WORK

1. Used and end-of-life electronics present a global challenge and require a global set of strategies.
2. Rigorous environmental and worker health and safety practices are central to the responsible management of used and end-of-life electronics.
3. "Circular economy" theory, where environmental, human health and social welfare impacts are factored into decisions, is essential to the long-term health of the planet.
4. From an environmental perspective, reuse is better than recycling. Also, reuse helps "bridge the digital divide" and, thus, can help create critically important economic and educational opportunities. However, it is extremely important to prevent irresponsible/illegal transfers of equipment made under the guise of reuse.
5. The "informal sector" – individuals and small enterprises that operate without government approvals or proper environmental health and safety practices – play the primary role in the collection, repair and reuse, and recycling of electronics in many parts of the world. Public policy and practical solutions must recognize this role, seek to promote safe and sustainable practices within the informal sector, and work to integrate it with the "formal sector".
6. Reuse and recycling laws, information, technologies, and collection infrastructure are needed in many parts of the developing world.

7. Participants in the reverse supply chain for electronics (those who manage used and end-of-life electronics) must comply – and know that they are working with others that comply – with the applicable laws and regulations of each country that equipment and materials pass through.
8. Partnerships – at many levels – established to share ideas and skills, and bring together resources, are needed to sustainably manage the world’s growing volume of used and end-of-life electronics.
9. Broader understanding by the public is essential to create momentum for policy change and public investment in effective solutions/strategies.
10. Those who manufacture and sell electronics – original electronics manufacturers (OEMs), distributors and retailers – have a vested interest in the effective management of e-scrap, and as such are critical partners.

WHY SERI?

SERI is a unique organization. It is the only multi-stakeholder, collaborative nonprofit organization in the world focused exclusively on minimizing the environmental and health risks posed by used and end-of-life electronics, while also maximizing the social and economic value presented by this equipment. The sheer volume of used and end-of-life electronics (we sometimes use “e-scrap” as shorthand) is so immense – and growing at exponential rates in some parts of the world – that even if the environmental and health risks were negligible they would still warrant mitigation.

Complicating matters is the critical role used electronics can play in “bridging the digital divide.” Affordable electronics are essential to individuals, communities, and organizations in developing countries as they strive to raise their standard of living. For many, used electronics provide the means to engage in today’s economy, access a broader range of health care, improve educational opportunities, etc. Recognizing the environmental, economic and social benefits of reuse, the R2 Standard was written in a way that allows for more opportunities to extend the useful life of electronic devices.

What does it mean to say that SERI is a “multi-stakeholder, collaborative nonprofit organization”? SERI’s Board of Directors, and its R2 (Responsible

Recycling) Technical Advisory Committee, comprise diverse groups of individuals representing recyclers, customers of recyclers, government, purchasing officials, nonprofit organizations, certification bodies, OEMs, and others. And we continually strive to broaden the representation. This enables SERI to understand and incorporate the political, sociological, and economic dimensions – not just the environmental and technical – into the solutions it helps craft.

SERI has the expertise to administer the R2 Certification Program (described below). With help from a widely diverse and experienced Board, SERI is keenly familiar with the multi-dimensional challenges relating to refurbishing and final disposition of electronics, including those that confront many developing countries and regions of the world. SERI's staff is growing with an eye to reinforcing our broad skillset in key areas. Consultants from around the world are also utilized to augment staff as needed.

SERI is the organization best situated and prepared to help address the challenges posed to societies and their environments by used and end-of-life electronics.

SERI'S GOALS

1. Policy makers and all users of electronics are committed to the responsible reuse and recycling of electronics.
2. Responsible repair and recycling of electronics is available throughout the world.

SERI'S FIVE-YEAR OBJECTIVES

In the pages that follow, SERI sets out its objectives for the next 5 years. These objectives are organized under three interrelated themes. Each objective is followed by specific actions SERI intends to take to achieve the objective. SERI will identify additional actions on a continuous basis.

Theme #1: "R2" is recognized worldwide as the most trusted indicator of responsible electronics repair, refurbishment and recycling.

SERI's first program, launched in 2010, is the voluntary R2 (Responsible Recycling) Certification Program. It is aimed at improving electronics recycling practices within the formal sector – that is, among recyclers that have government approvals and the capital necessary to employ the best environmental health and safety practices. Over 700 facilities in more than 30 countries have achieved R2 certification. OEMs, other large companies, and some governments are requiring certification of the companies in their reverse supply chains for electronic equipment.

R2 has proven to be an extraordinarily powerful means of effecting change in a large swathe of the electronics reuse, repair, and recycling industry. To maintain its effectiveness, SERI will continuously strive to maximize the quality of and adherence to the R2 program.

However, the structure of the R2 certification program (which is like that of many, if not most, certification programs) presents challenges with regard to ensuring strict conformance to the standard. First, SERI does not audit and certify the recycling facilities itself. This is done by independent certification bodies – for-profit companies that are accredited pursuant to International Accreditation Forum requirements. Secondly, certified facilities are audited by certification bodies only once a year. This annual on-site audit model – used in virtually all certification programs at this time – means that it is not possible to assure that a facility is in compliance with the standard at all times.

The R2 standard requires not only that the certified facility is in conformance but also that all of the facilities further down its reverse-supply chain are also conforming to a set of requirements. Documenting the path of equipment and

materials through what is often a multi-location or multi-country path is for many recyclers and refurbishers a new and demanding requirement.

SERI will work diligently and creatively to continually identify new tools and approaches, and to improve existing ones, for optimizing quality assurance within the certification program. Doing so is critical to the effectiveness of the program, and thus, to public trust and acceptance.

Objectives

1. All players involved in overseeing conformance with the R2 Certification Program are doing their jobs at the highest level.

Actions

- a. Strengthen SERI's working relationships with all those responsible for ensuring conformance to the R2 standard – specifically, accreditation bodies, certification bodies and recyclers.
- b. Enhance and further systematize communication between SERI and the R2 certification bodies so that they are better equipped to oversee the performance of their auditors.
- c. Continue optimizing communication with the R2 accreditation bodies (organizations that accredit and oversee the certification bodies) about concerns SERI identifies regarding performance of individual certification bodies.
- d. Continue developing and refining SERI's audit package review program (where SERI reviews the findings of auditors to determine whether the audit was thorough and accurate) and evaluate whether SERI should review audit packages before certification decisions. (Currently SERI reviews packages after certification decision as part of its continuous improvement efforts addressing auditor and certification body performance). Refine and formalize SERI's response procedures when it finds unsatisfactory audit packages.
- e. Continually evaluate and improve SERI's training of R2 auditors.
- f. Develop and implement trend analysis tools with which to benchmark auditor and certification body performance.
- g. Develop a database and a system, in coordination with the certification bodies, to track recycler performance.
- h. Put in place the policies and procedures necessary to become a full

member of ISEAL, the international organization which develops and publishes best practices for sustainability certification programs.

2. R2 certified facilities continually improve their conformity to the R2 standard.

Actions

- a. Expand and continually revise SERI training, webinars, and written materials for recyclers regarding conformance to the R2 Standard.
- b. Evaluate SERI's spot audit program, particularly the process for addressing facilities that appear not to be meeting significant R2 requirements.
- c. Explore whether and, if so, how GPS technology can be utilized in the context of the certification program.
- d. Continue to evaluate and refine the process for when and how SERI can remove a certified facility from the program (while minimizing the risk of significant litigation costs).

Theme #2: Maximize responsible reuse, repair, refurbishing and recycling of electronics in both developed and developing countries.

SERI recognizes that while the R2 Certification Program is an extremely effective and central tool for helping achieve SERI's mission, it is not sufficient to achieve the mission by itself. Education, outreach, training, and capacity building, among other things, are also necessary.

Greenpeace notes that in 2014 – only three years ago – just 15.5 percent of the end-of-life electronics in the world were recycled by the “formal” sector.² To put it mildly, this is not sustainable. Two things must happen. The public and private sector must be made aware of the myriad reasons to responsibly manage electronic equipment they no longer want. And governments and the private sector must develop policy frameworks and the infrastructure to sustainably deal with used and end-of-life electronics.

This is a Herculean task. Many countries have virtually no policy and no infrastructure capable of protecting human health and the environment. Even in

² <http://www.greenpeace.org/usa/reports/greener-electronics-2017/>

developed countries such as the United States, too many people still are unaware of the risks (and potential value) inherent in the electronics they no longer want.

SERI recognizes the immensity of these challenges and is eager to work with others – governments, NGOs, the private sector, and academia – to address them.

Objectives

- 1. Awareness about the importance of responsible reuse and recycling rises substantially among all electronics users – governments, organizations and individuals.**

Actions

- a. Establish partnerships with government agencies, NGOs, and businesses that share SERI's objective of raising awareness among electronics users.
 - b. As part of these partnerships, implement media initiatives in targeted developed and developing countries to raise awareness among the general public about the need for sustainable electronics management.
 - c. Publish SERI-authored articles in various policy and technical publications that, collectively, reach a broad audience worldwide.
 - d. Raise awareness of SERI, its achievements and programs (especially the R2 program) on the part of governments, refurbishers and recyclers, businesses, and NGOs around the world.
- 2. Awareness about sustainable electronics repair, refurbishment and recycling rises substantially among all entities in the electronics reverse supply chain.**

Actions

- a. Partner in delivering education programs – involving in-person trainings, webinars, a web-based document library – on sustainable practices in the reverse supply chain for electronics for key regions of the world (current regions under consideration: Nigeria, India, Bangladesh).
- b. Participate in a range of capacity-building programs to facilitate adoption of best management practices in the reverse supply chain for electronics in

key regions of the world, particularly in developing countries.

- c. Promote environmentally sound management and R2 requirements through participation in policy forums convened by governments, universities, NGOs, etc.

3. R2 Certification Program infrastructure (e.g. availability of local consultants and auditors) increases worldwide.

Actions

- a. Develop a plan for rolling out R2 worldwide that includes an initial emphasis on southeast Asia (where SERI is currently seeing the most interest and need).
- b. Identify existing and new accreditation and certification bodies in key regions. (Current priorities: Asia, Latin America and Australia.)

Theme #3: Measure and Communicate SERI's Impacts.

SERI needs to know it is making significant strides towards achieving its mission and it needs to be able to communicate these gains to its constituents. To do this, SERI must develop metrics to measure its impacts.

SERI is a "Subscriber" (sort of an associate member) of the ISEAL Alliance (www.isealalliance.org), whose "mission is to strengthen sustainability standards for the benefit of people and the environment." SERI is working towards becoming a full Member of ISEAL, which entails conforming to its Impact Code – a rigorous set of requirements relating to defining and measuring the impacts a certification program is striving to achieve. The Code aligns well with SERI's objectives in this area and SERI can follow ISEAL's guidance towards defining and measuring its own program impacts. It should be noted here, however, that defining and measuring impacts is far more challenging than one might imagine. Most of the obvious impacts do not have obvious metrics or would be very resource intensive to measure. Still there is value in making the effort to articulate impacts and find ways to estimate these impacts, however imperfectly.

Knowing SERI's progress towards achieving its mission is important to internal

planning and allocation of resources. Articulating and communicating its impacts and accomplishments to constituents is equally important.

Objectives

1. Identify measurable impacts underlying SERI's mission.

Actions

- a. Demonstrate SERI's conformance with ISEAL's Impact Code (<https://www.isealalliance.org/our-work/defining-credibility/codes-of-good-practice/impacts-code>).

2. Measure the impacts underlying SERI's mission.

Actions

- a. Demonstrate SERI's conformance with ISEAL's Impact Code (<https://www.isealalliance.org/our-work/defining-credibility/codes-of-good-practice/impacts-code>).

3. Articulate SERI's impacts and accomplishments to key constituent groups.

Actions

- a. Identify the SERI impacts and accomplishments that are most relevant to each group (e.g. Recyclers, Customers of Recyclers, Government Agencies, OEMs, ITAD Industry, Consumers, NGOs, etc.)
- b. Determine the most effective methods and venues for communicating relevant progress and successes to each constituent group.
- c. Prioritize constituent groups to determine the allocation of SERI resources.

4. Identify and Equip SERI / R2 "Ambassadors"

Actions

- a. Identify potential promoters who share our vision or have common interests.
- b. Equip them to share SERI's message within their sphere of influence (e.g. policy makers; consultants in new target markets; trade organizations; etc.)