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Meeting the Milestones in the Responsible Sourcing Roadmap

**Good Practice Guidelines for the
Electronics Sector**

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Contents

Executive Summary.....	3
Abbreviations.....	4
1 Introduction	5
1.1 The Vision for the Electronics Sector.....	5
1.1.1 Why Responsible Sourcing Matters Across the EEE Sector	5
1.1.2 Methodology & Approach.....	6
2 Supporting Responsible Workplace Practices.....	7
2.1 Business Case.....	8
2.1.1 The Good Practice Principle	8
2.1.2 Guideline Scope & Contribution.....	8
2.2 The Responsible Mica Initiative.....	9
2.2.1 Mapping the Supply Chain	9
2.2.2 Compliance with Workplace Standards	10
2.3 Impact.....	11
2.4 Key Considerations for Upstream Actors	12
2.4.1 Mapping with an Objective	12
2.4.2 Support-based Approach to Gain Compliance.....	12
2.4.3 Collective Use of Resources by Lead Firms	12
2.4.4 Technology to Support Responsible Procurement	12
2.4.5 Socio-economic Context Matters.....	13
3 Empowering the Workforce.....	13
3.1 Business Case.....	13
3.1.1 The Good Practice Principle	14
3.1.2 Guideline Scope & Contribution.....	14
3.1.3 Creating Worker-driven Monitoring	15
3.1.4 Leveraging the Public Procurement Contract	15
3.1.5 How Worker-driven Monitoring Works	17
3.1.6 Resolving Challenges through Industry Engagement.....	18
3.1.7 The Monitoring & Reporting Process	19
3.1.8 Key Policy Documents & Tools	19
3.2 Impact.....	19
3.3 Key Considerations in Designing Monitoring Policies	20
3.3.1 Identifying Buyer Priorities.....	20
3.3.2 Choose an Independent Coordinator.....	20
3.3.3 Balancing Local & International Standards	20
3.3.4 Using Contracts for Performance.....	21
3.3.5 Training & Staff Development.....	21
4 Resource Efficiency & Product Longevity	21

4.1	Business Case.....	22
4.1.1	The Good Practice Principle	22
4.1.2	Guideline Scope & Contribution.....	22
4.2	Designing Longevity in Electronic Devices.....	23
4.2.1	Creating a Resilient Device.....	23
4.2.2	Developing a Longevity Score	24
4.3	Impact.....	25
4.4	Key considerations in increasing product lifespans	26
4.4.1	Product Design Choices.....	26
4.4.2	Consumer Trust & Behaviour	26
4.4.3	Measuring Longevity	27
5	Conclusion.....	27

Figures

Figure 1: RMI's approach to supporting worker right.....	10
Figure 2: Electronics Watch support for affiliates	16
Figure 3 Fairphone's approach to product longevity.....	23

Tables

Table 1 Selected good practice principles	7
Table 2: Calculating the longevity score	25
Table 3: Longevity of Fairphone against market average.....	26

Executive Summary

Keywords:

The good practice guidelines on responsible sourcing (RS) in the electrical and electronic equipment (EEE) sector outline key practices distilled from the RE-SOURCING Project's research and consultations on the EEE Sector. As a means to promote peer learning and increase the uptake of RS practices, this document is of relevance to all actors involved in the EEE Sector, in the EU as well as internationally. Three good practice guidelines are elaborated in this document, with case studies to show how they have been implemented.

The first case looks at [supporting responsible workplace practices](#). Using the example of the Responsible Mica Initiative, the good guidance principles look at how lead firms can support the improvements of working conditions for the workers in their upstream supply chains. By supporting assessment and training on the ground and in parallel working with improving the socio-economic conditions of the workers as well as the legal framework, interventions can lead to more and longer lasting impact on the ground. The approach focuses on supporting tools for upstream suppliers to progressively improve workplace practices.

The second [case looks at empowering the workforce](#) by placing them at the centre of a worker-driven monitoring programme. Good practice principles are drawn from the case of Electronics Watch, which brings together public sector buyers, civil society organizations and experts in human rights providing capacity for public buyers to follow up contractual obligations with suppliers through worker-driven monitoring. Working with public buyers, Electronics Watch leverages the strength of contractual obligations as a tool for implementing strong workplace standards in factories across the world. Workers are able to raise complaints, participate in the design of remedial actions and report on the progress on these actions by the company. The approach supports lead buyers to be aware of labour conditions in the workforce, through the independent coordinator.

The final case looks at creating resource efficiency by increasing product longevity. Based on the smartphones designed and brought to market by the company Fairphone, this case examines personal electronic devices that create longer lifespans by relying on both product durability and consumer trust. In addition, it illustrates how Fairphone created a longevity score to evidence the lifespan of its device, based on actual lifetime and expected lifetime. The results indicated a longer use period for Fairphones than the average market, leading to avoided CO2 by the company, as fewer devices needed to be manufactured.

These three cases illustrate the importance for firms and government bodies to have clarity in their objectives around RS. This includes understanding the impact of their commercial decisions and designing processes that address the challenges in implementing these decisions. The case shows the importance of using external independent coordinators who are experts in their areas, particularly for worker protection. Finally, the cases show that a 'silo' approach to RS is not advised, and all RS approaches need to consider the context and environment in which particular issues reside. The drivers for addressing challenges, need to address the larger context of these issues.

Abbreviations

CSO	Civil Society Organisations
EEE	Electric and electronic equipment
ESG	Environmental, Social & Governance
ICT	Information & Communications Technology
OECD	Organisation for Economic Cooperation & Development
OHS	Occupational Health and Safety
RBA	Responsible Business Alliance
RMI	Responsible Mica Initiative
RS	Responsible Sourcing

1 Introduction

Electrical and electronic equipment (EEE) refers to items containing “circuitry or electrical components with power or battery supply”¹. Examples of electrical equipment include electric power generators and transformers; lightbulbs and lamps; domestic appliances; fibre optic cables; wirings and wiring devices, among other items. Some of the most common electronic items are computers, mobile phones, tablets, smart home products, and their components such as circuit boards and semiconductors. The industry players and the supply chain of electrical equipment and of electronic equipment are each very different. The RE-SOURCING project focuses on the electronics sector, which covers consumer electronics and electronic components such as semiconductors and circuit boards. The electronics industry is a major consumer of the minerals such as tin, tantalum, tungsten, gold, and mica.

1.1 The Vision for the Electronics Sector

1.1.1 Why Responsible Sourcing Matters Across the EEE Sector

There are several reasons to focus on the electronics sector when it comes to Responsible Sourcing (RS). First, there is a long history of documented and alleged social and environmental impacts of the sector. Second, due to emerging technologies such as artificial intelligence and big data processing, electronic products are increasingly embedded in other industries such as automotive, health, internet of things, and security, and they play a key role in digitalisation and the energy transition.

While the electronics sector contributes to economic growth, it has been associated with human rights violations and environmental damage along its entire supply chain. From mining to recycling, workers in the electronics supply chain may face poor working conditions including exposure to chemicals, low wages, violation of freedom of association and collective rights, flexibilization of labour, and in some cases even gross human rights violations such as child labour and forced labour.²

Mining and processing of minerals and the recycling of electronics potentially result in pollution of water, soil, and air, and large-scale mining erodes landscapes and damages ecosystems. E-waste has become “the world’s fastest-growing domestic waste stream, fuelled mainly by higher consumption rates of electric and electronic equipment, short life cycles, and few options for repair”³.

The [State of Play & Roadmap Concepts: Electronics Sector Report](#) (2021) discusses these challenges in more detail. In discussion and in consultation with key stakeholders on how to address these challenges, the project team has developed a [Vision](#) for the EEE sector, focused on three main pillars. First, businesses and States achieve full respect for and protection of human rights across all entire value chain operations including effective mechanisms for accountability and access to remedy for affected rights holders.

Second is the imperative of protecting the environment, including remaining within planetary boundaries, preventing global warming of more than 1.5°C above pre-industrial levels, and preventing

¹ Step Initiative, “One Global Definition of E-Waste” (Step Initiative 2014, June 3, 2014), https://www.step-initiative.org/files/_documents/whitepapers/StEP_WP_One%20Global%20Definition%20of%20E-waste_20140603_amended.pdf.

² [State of Play & Roadmap Concepts: Electronics Sector Report](#) (2021)

³ UNITAR and UNU, “The Global E-Waste Monitor,” accessed July 21, 2021, <http://ewastemonitor.info/>.

further biodiversity loss. Third is the global eradication of poverty and a significant reduction of inequality that includes a minimum social foundation and a fair share of costs and benefits among the value chain actors⁴. A Roadmap has been developed to achieve this Vision⁵. To aid the roadmap process, this document provides a set of guidelines for specific milestones for the EEE sector, which firms and governments can utilise in achieving the milestones laid out in the roadmap.

In achieving the milestones in the EEE Roadmap, RS practices need to be incorporated in business operations, for both downstream and upstream companies. To increase the uptake of RS approaches amongst a larger number of stakeholders and actors, peer learning and good practice learning can be a successful avenue to benefit from the experience of others. This document serves to share good practice guidelines, based on principles of transferability, amongst EEE sector actors.

1.1.2 Methodology & Approach

An initial list of RS challenges facing the EEE sector was documented in the [State of Play & Roadmap Concepts: Electronics Sector Report](#) (2021). During engagements and consultations with sector stakeholders, good practice examples were noted, defined as the use of innovative approaches addressing existing and foreseen challenges. Through a selection process involving discussions with sector experts, the Project's Advisory Board and Project Steering Committee, three cases were selected that spoke to the priority challenges within the EEE value chain, addressing important issues within the RS agenda.

Case owners (experts involved in the design or implementation of the respective practice) were identified for each of the good practice examples and interviewed by the project team. In addition, the case owners presented and discussed their cases at the [Flagship labs](#) for the EEE sector by this project in 2023.

Distilling the information presented by the case owners, as well as additional research carried out for this document, the guidance presented here is a step further from the specificities discussed in the Flagship labs.

It is important to note that the guidance document is focused on more *general good practice principles*, and while organisations have been used to illustrate these practices, the RE-SOURCING project *does not speak to the overall responsible sourcing performance of the organisation* – we only highlight aspects of one particular good practice that the organisation has undertaken.

This document provides three cases for the EEE sector (see

⁴ Details of this Vision can be found in the [State of Play & Roadmap Concepts: Electronics Sector Report](#) (2021)

⁵ Roadmap for the EEE sector (forthcoming)

Table 1). The cases include supporting improvements in conditions for a workforce that faces challenging socio-economic conditions; empowering workers by a mechanism connecting them directly with lead clients and increasing resource efficiency by increasing the longevity of electronic devices. Where appropriate, the document includes additional resources for the reader.

Table 1 Selected good practice principles

<p>Title: Supporting Improvement for the Workforce Case Study: The Responsible Mica Initiative</p> <ul style="list-style-type: none"> • Holistic approach to improve working conditions & eradicate child labour • Multistakeholder approach on local level to work on formalisation • The use of block chain traceability tool • Development of workplace standards specifically for mica processors • Development of training materials & local staff for support
<p>Title: Empowering the Workforce Case Study: Electronics Watch</p> <ul style="list-style-type: none"> • Principles for worker-driven monitoring • Consistent methodology for monitoring: off-site qualitative research with workers • Use report findings to engage with companies to remedy violations & improve working conditions • Public buyer support • Terms of engagement between coordinator & industry association
<p>Title: Resource Efficiency & Product Longevity Case Study: Fairphone Longevity Score</p> <ul style="list-style-type: none"> • Innovating scalable sustainable solutions for electronic product longevity • Measuring longevity of a product still in use

The next three chapters address each of these cases in detail, with the final chapter offering some general guidance based on these cases.

2 Supporting Responsible Workplace Practices

Minerals are inputs into many products, ranging from electronics to construction, from cosmetics to the oil industry. These different sectors are often driven by a different set of sustainability performance standards (with similar objectives) and have achieved different levels of progress on their path to RS⁶.

Where a mineral is subject to a multitude of responsibility standards and requirements from different sectors, one approach is to drive responsible practices at the extraction level, regardless of which supply chain the mineral feeds into. By ensuring on the ground implementation of responsible practices, every chain benefits. To enact such change, all downstream and upstream actors from the different sectors need to be involved.

One such mineral is mica, which is used in the electronics industry as well as in the cosmetics, construction, plastics, paints and the oil industry. The main mica exporting countries are India and Madagascar, other exporters include Brazil, China and the USA⁷. In the two India states of Jharkhand and Bihar, apart from a few mines, mica is ‘collected’ by an informal network of artisanal miners. These

⁶ For a detailed list of sustainability standards in mineral value chains see [State-of-play: The International Responsible Sourcing Agenda](#). RE-SOURCING Project (2020).

⁷ Schipper and Cowan, [“Global Mica Mining and the Impact on Children’s Rights”](#)

informal networks are associated with human rights violations and child labour. Given that the informal activity is not regulated in India, additional risks for safety and environmental impacts, and economic exploitation also emerge. With mica collection considered to be an illegal activity in Jharkhand and Bihar, the ability for RS to be implemented can be doubly challenging. The [Responsible Mica Initiative](#) (RMI) has developed a three-pronged approach to addressing these challenges. They work with downstream companies to support upstream actors, working with villages where the workforce resides and work with governments to improve the regulations governing informal mica collection networks.

2.1 Business Case

Given the number of sectors involving mica in their supply chains, and given the fact that the mining of mica predominantly concerns informal- and artisanal mining, associated with risks of human rights violations, including child labour, leave end users with no choice not to act. The poor socio-economic conditions of the workers involved in mica collection, require responsible practices to consider both on-site and contextual issues faced by the workforce.

Using a process that looks at driving change for both these issues on the ground, rather than through a compliance lens, brings benefits to the weakest actors in the supply chain. By working with local processors (rather than focusing on audits alone), the gaps between expected workplace standards and workplace practices can be gradually closed. Using training and support to achieve these ends brings practical (and long lasting) impacts on the ground.

By collectively driving changes on the ground, multiple lead firms from different sectors can improve their RS practices.

2.1.1 The Good Practice Principle

Mica demand comes from a number of different sectors, with different practices on supporting sustainable supply chains. On the supply side, for the largest exporter of mica (India), the states of Jharkhand and Bihar either consider mica collection to be illegal or haven't release any license to collect mica. Therefore, the regulatory route to implementing sustainable practices is limited. Given these limitations, the good practice principles include:

1. Addressing on the ground implementation of responsible practices by empowering and training mica processors to initiate change
2. Addressing the wider socio-economic circumstances within which workers live, to drive a holistic change
3. Including all the actors in the supply chain (and not just lead firms) to drive collective action and change from all parties involved.
4. Using technology (blockchain) to improve visibility of actors in the supply chain, thereby providing more information on where change needs to be directed. In addition, layering ESG indicators/data to create visibility on which matters need to be addressed.

2.1.2 Guideline Scope & Contribution

The guidance provided in this section addresses downstream actors in supply chains that use minerals that are largely extracted through informal/artisanal means. For actors looking to create evidencable

sustainability practices within the upstream actors, this case provides a good practice approach on how to initiate on the ground impacts and deliver change.

The [Responsible Mica Initiative](#) (RMI) is being used as the case study for this approach. The RMI was initiated in 2017, to address the issues of child labour and workers' rights in the mica supply chain. RMI's members include over 85 organisations from companies in all sectors consuming mica, CSO's and Federations. The aim of the organisation is to collectively design and implement solutions, with downstream actors actively supporting their upstream suppliers in improving working conditions and removing child labour from mica collection.

2.2 The Responsible Mica Initiative

The RMI has a three-pronged approach for addressing poor working conditions and child labour in the mica collection and processing space. These are:

1. Mapping & workplace standards: Mapping the source of mica in their supply chain, each RMI member must make efforts to improve and bring up to standard workplace environment, health and safety conditions, fair labour practices (including the prohibition of child labour)
2. Community empowerment: Focusing on the villages that provide the workforce for mica collection and processing, empower communities to access improved educational resources for children, improve livelihood by diversifying sources of revenues, beyond mica, and link communities to government social programmes.
3. Legal frameworks: Given the unlegislated space for mica collectors in India and Madagascar (a large share of mica exports comes from artisanal miners who do not have recognised mineral permits or licences), persuade governments to create laws and regulations and enforcement mechanisms to provide a suitable regulatory framework for the mica collectors.

Of these three approaches, the good practice discussed in this section focuses on the first principle on mapping supply chains and improving workplace standards.

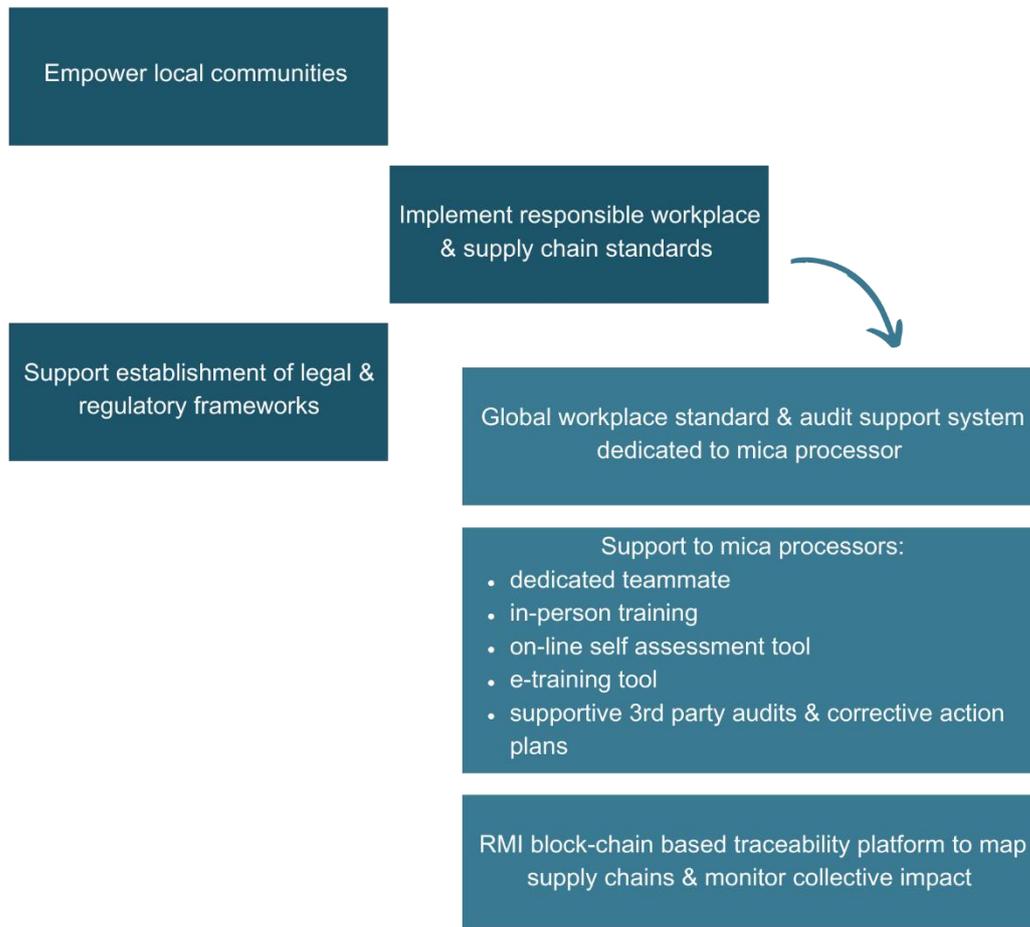
2.2.1 Mapping the Supply Chain

RMI approaches supply chain transparency as a means to provide targeted support for mica processors, by requiring downstream actors to provide support to upstream actors. The emphasis is on training and support activities, and while audits form part of this process, they are used to identify gaps to be addressed rather than as a means for punitive actions for noncompliance.

As a first step RMI members **map their supply chain**, with end primary manufacturers tracing the chain back through intermediate manufacturers, to exporters (India & Madagascar) processors and eventually collectors. The mapping must be conducted annually to ensure data and scope remain relevant.

Initially (2017) the supply chain mapping was undertaken through a manual process. In 2021, RMI in collaboration with TILKAL moved to a **blockchain based platform** mapping supply chains. The [platform](#) allows for improved data transparency and standardising data formats and reporting. The platform creates a shared database for lead firms (RMI member), thereby pooling resources and information leading to cost efficiencies. The system design ensures confidentiality for each member's data and respects the confidentiality of commercial information.

Figure 1: RMI's approach to supporting worker right



Source: Adapted from [Flagship Labs: Lessons from the Responsible Mica Initiative \(2023\)](#)

At this time, RMI is making efforts to add an environmental, social and governance (ESG) layer to this database, where information on wages, workplace conditions, Occupational Health & Safety standards and environmental indicators etc will be added for each processor⁸. This visibility is expected to assist RMI members in identifying and improving the working conditions for processors and collectors in their particular supply chains.

2.2.2 Compliance with Workplace Standards

At the second stage, RMI members are required to request the identified processors, and soon collectors, to **adopt the workplace standards for mica processors** set by the organisation. The standards reflect both international and national standards and legislation and address the following issues:

- Require compliance to all national laws and regulations, including payment of taxes
- Employ workers of legal age, provide fair working hours, respect the freedom of association and the rights of women
- Commit to offering the minimum wage and overtime pay and other employment benefits, with an objective to reach a living wage

⁸ See [Flagship Labs: Lessons from the Responsible Mica Initiative \(2023\)](#) for more details

- Respect occupational health and safety protocols
- Take into consideration environmental systems and minimize negative environmental impacts of operations.

Initially the processor is asked to complete a self-assessment to address the key gaps in practice from the standards. **Training** is provided, both on-site and with follow up materials [available online](#), for processors to be able to implement the changes required. The processor is then audited by an external party to gauge progress and identify further areas for progress. Again, training is provided to address these gaps.

Good Practice:

- Utilising supply chain transparency as a means to target assistance and support
- Directly connecting lead firms to early stage collectors and processors to drive change
- Involving all actors in the supply chain to support changes on the ground
- Target training to needs of the processor, identifying gaps between practice and standards
- Using technology to standardise data collection and formats, to achieve economic efficiencies for multiple actors
- Support based approach, rather than punitive actions.

2.3 Impact

The cross sectoral approach of RMI ensures multiple actors (lead firms) have a common set of workplace standards for their suppliers. This ensures that mica processors with limited capacities are not overwhelmed with multiple compliance requirements. The Global Workplace Standards set by the RMI are comprehensive in their coverage of issues and requirements.

The efforts to meet with these standards tend to take a capacity building rather than a punitive approach to promote compliance. While not discussed in detail in this chapter, the workplace standards programme is run in parallel with a [Community Empowerment](#) programme where the workforce resides, to improve their socio-economic conditions. In addition, engagement with governments of India is being carried out to improve [Legal Frameworks](#) governing the informal mica collection activities.

In 2021, two pilot audits had been carried out for mica processing units in India, then 5 additional ones in 2022, against the Global Workplace Standard and more audits are underway. Under the community empowerment pillar, RMI has (by end 2022) worked with 180 mica dependent villages. Their achievements included an increase in non-mica dependent income generation, high enrolment of children in schools (and away from illegal mining activity), with 49% more children attending school (RMI: [Annual Report, 2021](#)).

For RMI members, the initiative offers a level of supply chain transparency that allows for improved reporting on the sustainability metrics of their products and companies. With the intended expansion of the blockchain platform data to include ESG indicators, companies will have greater visibility on the weak performance areas in their supply chain, thereby offering targeted support to their suppliers. The evidence collected under the platform can also assist companies to meet other legislative reporting requirements such as the EU's [Corporate Responsibility Due Diligence Directive](#) (2022)

2.4 Key Considerations for Upstream Actors

2.4.1 Mapping with an Objective

RS literature and practices emphasize the importance of mapping supply chains for lead firms, as without this information, it is impossible to assess or improve sustainability performance for a company or a product. However, supply chain mapping should have an objective other than simply tracing contractors and sub-contractors. The nature of the objective will determine the type and level of information generated during the mapping exercise. If the purpose of the mapping is to track the flow of a mineral through various firms, the focus is on geographical location of the suppliers. If the mapping is meant to identify firms with weak knowledge and compliance with workplace standards, the mapping exercise will take a different form. It should be clear that the objective of the mapping for lead firms is to conduct their individual human rights due diligence.

2.4.2 Support-based Approach to Gain Compliance

Responsible practice or sustainability standards set out a set of performance standards, either focusing on actions to be undertaken or goals to be achieved (or both). There are numerous ways in which these standards can be implemented. These range from companies designing their own approaches towards compliance, to training and capacity development to bring about change in practices. Depending on the capacity of the firm (mica collectors and processors in this case study the firm capacities can be low), training and support activities have shown to be effective in bringing compliance with set performance standards. In the same vein, audits (and certifications) are used more effectively as a diagnostic tool to tailor support activities, rather than a pass/fail system that carries punitive actions (such as a failure leading to termination of contract)⁹.

2.4.3 Collective Use of Resources by Lead Firms

Mica, and other similar minerals, are usually a small (but essential) input into a product or sector. In the case of mica, the mineral is also very cheap, the value is negligible in the whole of the Bill of Materials (BOM) which makes it cost inefficient when each company individually put effort in mitigating the identified risks. Instead, pooling resources from all lead actors, regardless of industrial sector, can be more cost effective for all actors. As was shown in this case study, lead firms from different sectors have effectively pooled their resources to map and upgrade working practices from their mica processors.

2.4.4 Technology to Support Responsible Procurement

With the advances in technology, using approaches (such as blockchain technology) can significantly reduce the time taken for data collection. An efficiently designed platform can respect confidentiality of commercial information while at the same time allowing for additional layers of information be added in the future. The standardizing of templates and reporting processes allows for firms to compare performance by different suppliers. Dependent on the technology, the validity of the data can also be assured (such as blockchain technology)¹⁰ and the information used to meet legal reporting requirements for the company.

⁹ See the Supplier Assessment through Shared Resources Case in the [Good Practice Guidance for the Renewable Energy Sector](#) (2021) for a similar example.

¹⁰ For a detailed discussion on the use of blockchain technology, see [Digital Solutions for Supply Chain Due Diligence](#) (2022).

2.4.5 Socio-economic Context Matters

While there is great importance of focusing on workplace standards, it is important to remember the socio-economic context of the workforce. Particularly in cases where child labour is a major risk, firms need to acknowledge that standards that require the absence of children on work sites are not enough. These standards must be matched with improved socioeconomic conditions in the community, where schools and other facilities need to be made available and living wages guaranteed. Without these parallel processes, the implementation of no child labour clauses is difficult to implement.

Additional Resources:

- RMI Knowledge Centre: [Responsible Workplace Standard](#)
- RMI e-Training Program: [e-Training Courses](#)
- RE-SOURCING Report: [State of play & roadmap concepts: Electronics](#) (2021)
- RE-SOURCING Flagship Lab: [Lessons from the Responsible Mica Initiative](#) (2022)
- RE-SOURCING Roadmap Workshop: [Electronics Sector](#) (2022)

3 Empowering the Workforce

RS requires firms participating in a supply chain to adhere to sustainability standards usually set either by regulatory frameworks (i.e. ILO conventions or the OECD Guidelines for Multinational Enterprises, the customer or the lead firm. These standards will include obligations to respect human rights and ensuring workplace standards are met¹¹. While there are important arguments on the importance of including sustainability-based performance requirements in contracts, approaches on how to achieve this compliance are more limited. Where the workforce is several tiers down the lead firm, because of supply chain complexities, how can the lead firms and suppliers be empowered to ensure compliance with high labour standards?

One good practice approach to empower the workforce to drive compliance by employers has been developed by Electronics Watch. Electronics Watch is an independent, not for profit organisation that focuses on supporting public buyers to safeguard and improve worker rights and working conditions in their electronics supply chains. It relies on using worker-driven monitoring as a key driver of change within the industry. Moving away from social audits and third-party verifications and certifications, this approach puts workers at the centre of the monitoring and remediation process. The approach works on two fronts: 1) it allows workers to raise issues and violations faced in the work place and 2) moves towards a collaborative process to address and remedy these violations.

3.1 Business Case

With the increased emphasis on ensuring responsible procurement, the implementation challenge is in achieving compliance within complex supply chains. This is particularly true for the electronics sector, where the supply chains contain multiple factories producing components and assembling the

¹¹ For a detailed list of sustainability standards in mineral value chains see [State-of-play: The International Responsible Sourcing Agenda](#). RE-SOURCING Project (2020).

final product/model. Approaching the issue from the bottom-up (at the factory level) allows for a practical approach that can be consistently applied across a number of factories. The added advantage is the improvement in workplace standards in one factory can improve the performance of multiple buyers (a single factory can be producing components/assembly for multiple clients).

The worker-driven approach is focused on betterment of working conditions and not just reporting challenges faced by the workforce. This approach steps away from a 'certification' model, which tends to focus on performance – usually measured at a particular point in time. The continuous monitoring methodology employed provides for long term worker rights and protection systems to be established for the workforce and a compliance mechanism for the end client.

3.1.1 The Good Practice Principle

As noted, the electronics sector has complex supply chains. First, the final product of a lead firm/brand company will have several components manufactured by different factories and assembly is undertaken by other factories. Second, these factories will be supplying services or goods to a number of electronic firms and not just one client. For a single lead firm/brand firm, it can become challenging to trace all tiers of suppliers and provide evidence of their sustainability practices.

This good practice case approaches the issue from a different angle. It focuses on reporting being generated at the factory level. It places workers as the centre of the reporting and monitoring process, rather than a monitoring process that is initiated from outside the factory gates. The good practice principles behind the process include:

1. Using an independent coordinating organisation to liaison between contracting parties to ensure monitoring and remedial actions related to worker rights
2. Empowering the workers to report violations and issues and to be involved in designing the remediation actions
3. Using local civil society partners for monitoring and being an information conduit for workers, thus creating a continuous monitoring mechanism
4. To leverage the buying power of clients (public buyers in this case) to drive change and compliance within the electronics industry.

3.1.2 Guideline Scope & Contribution

The guidance provided in this chapter is primarily drawn from a case study focusing on public procurement. However, private sector organisations can also benefit from the principles. While the guidelines are developed for the electronics sector, they can potentially be applied to any sector with complex supply chains and for products that involved multiple manufacturing sites.

The good practice is illustrated by the case of [Electronics Watch](#), which is an independent, not-for-profit organisation based in the Netherlands. Electronics Watch acts as an independent coordinator and monitor for its [affiliates](#) (or members) which are public bodies. These include government agencies, universities, libraries and city councils. The organisation has more than 900 affiliates based in Australia, Belgium, Denmark, France, Germany, The Netherlands, Norway, Spain, Switzerland, Sweden, and the UK, as well as one International Organisation.

In manufacturing and mining regions, Electronics Watch works with [monitoring partners](#), which are local civil society organisations. Its monitoring partners are based in China, Czech Republic, Hungary, India, Indonesia, Malaysia, Mexico, Philippines, Poland, Taiwan and Vietnam. The organisation is also developing coordination with mining monitoring partners in Bolivia, DRC, Indonesia, and Philippines.

Companies/manufacturers are not members, affiliates or monitoring partners for Electronics Watch and no alliances or partnerships are undertaken. Instead, Electronics Watch has agreed to 'Terms of Engagement' with the Responsible Business Alliance (RBA) that set out the actions to be undertaken when a violation is reported.

3.1.3 Creating Worker-driven Monitoring

Electronics Watch's key objective is a sustained improvement in worker rights and working conditions in the global electronics industry. Its practical approach has been to focus on leveraging buying power and contract compliance as a key tool to meet its objective. The approach is based on three key principles:

1. Use the leverage held by public buyers to drive improvements for workers in supply chains
2. To hold companies in public procurement supply chains to account for worker rights violations
3. Assisting workers in public procurement supply chains to organise to realise their rights.

Electronics Watch, recognising the long-term nature (and high value) of public procurement contracts works with public buyers to develop procurement contracts, be involved in contract management and creating a dialogue with the industry when issues and violations are reported. The remainder of this section provides more details on each of these aspects.

3.1.4 Leveraging the Public Procurement Contract

Public procurement refers to the purchase of goods and services by governments and state-owned organizations. These can be substantially large value contracts and often come with stringent rules for contractors on sustainability standards. Public procurement from the electronics sector includes products from computers to communication equipment. Often the supplier of these products has sub-contractors at various levels of the supply chain. Therefore, the challenge for public institutions is to monitor compliance across the supply chain. These supply chains can be complex, may rely on self-reporting or not amenable to third-party certification.

As a coordinator, Electronics Watch works with its affiliates in tender development and contract management (Figure 2). Electronics Watch emphasises that worker rights and monitoring need to be built into the contract from the very beginning. The contract needs to address how worker rights will be monitored, and raised worker issues will be resolved.

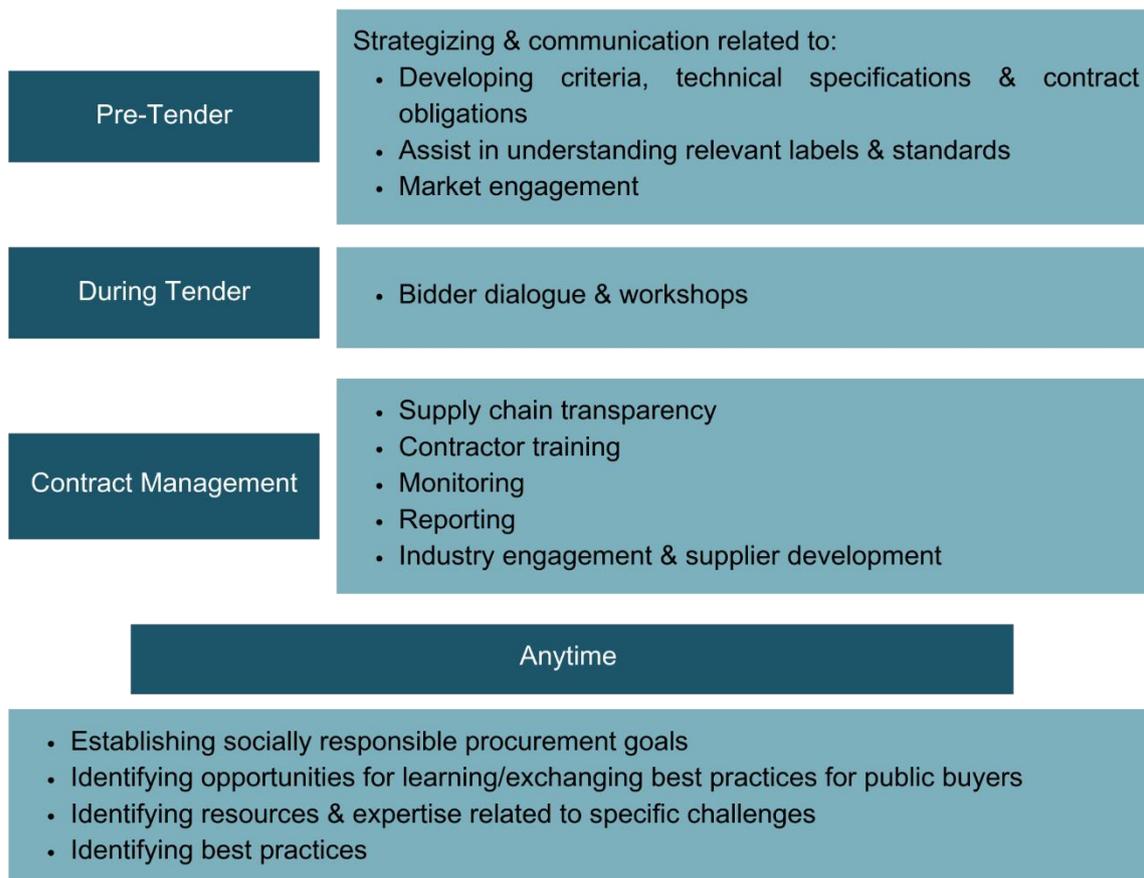
Pre-tender: Electronics Watch works with public buyers at the pre-tender stage, strategizing with the affiliate to identifying what they require from their contractors in terms of safeguarding and reporting on worker rights. This is then translated into a selection criterion as well as the award criteria for the tender. The criteria include technical specifications, contract obligations, and the understanding of relevant labels and standards to be applied in the contract. Electronics Watch does not recommend any particular label or certification, instead assisting buyers in understanding what these standards require.

These expectations and obligations are presented as contract specifications for the contractor. Electronics Watch offers a model Code ([Electronics Watch Contract Conditions for Supply Contracts](#)) which outlines worker rights and working conditions. These include issues such as: employment conditions, fair wages, protection from violence, evaluating and monitoring OHS standards. Other important areas are freedom of association and the right to collective bargaining, freedom of employment (ie forced labour issues), discrimination, and precarious working conditions (related to

employment conditions). While some affiliates choose to use the model Code in its entirety, others use particular aspects of it.

Becoming a signatory to such a contract, provides a legal obligation by the contractor to implement these standards. Hence worker rights are not presented as general guidelines but as specified due diligence expectations and responsibilities the contractor is obliged to uphold.

Figure 2: Electronics Watch support for affiliates



Source: Flagship Lab: [Lessons from Electronics Watch \(2023\)](#)

Contract management: Once the tender had been awarded, Electronics Watch’s coordination efforts move on to monitoring contract compliance. This is essential as public procurement contracts can be valid for up to 7 years. Under the Electronics Watch [model contract](#), the contractors is responsible for a number of due diligence requirements. These include:

- **Supply chain transparency:** The contractor is required to provide information on the location of assembly and component factories where particular (equipment) products/models are being manufactured under the contract.
- **Collaboration with independent monitors:** Contractors are required to collaborate with Electronics Watch and ensure there is no retaliation against workers who participate in the monitoring process. In addition, contractors may be required to ensure factory access is granted to independent monitors.

- **Remedy & corrective action:** The contractor is obliged to ensure that factories in their supply chain undertake remedies and corrective actions, when violations are reported by Electronics Watch.

Good Practice:

- Worker rights, monitoring measures and remedies should be discussed at the start of the contract drafting process.
- Purchasers should consider their legal and voluntary standard requirements before starting the contract drafting process.
- Protection of worker rights should be included in clear and specific language within the contract.
- Remedies & corrective actions, and the consequences of failure to undertake these actions, should form part of the contract.

3.1.5 How Worker-driven Monitoring Works

A worker-driven monitoring process puts workers at the centre of the process. This empowers workers to drive the monitoring process, and hands them the **means to initiate complaints** and/or grievance mechanisms. In addition to initiating grievances, the approach collaborates with the workforce to **design remedial and remediation actions**. Workers are then involved in the monitoring of these actions.

The worker-driven monitoring methodology developed by Electronics Watch incorporates qualitative and quantitative aspects, based in anthropology and sociology. The data is analysed against both domestic and international standards (including the labour law that applies in the country). The **methodology** is based on the following principles:

1. Keep workers at the centre
2. Focus on achieving remedy and preventing violations of worker rights
3. Conduct independent and objective monitoring
4. Strengthen workers' voices through monitoring activities
5. Use context-dependent and case-dependent methods
6. Ensure findings are evidence-based
7. Protect workers and whistle-blowers
8. Adjust your reaction time to workers
9. Engage companies to drive change¹²

Two key aspects of this methodology are worth emphasising. First, worker-driven monitoring is not undertaken for the sake of monitoring and reporting only. The goal is to use the evidence and information generated to remediate violations, provide reparations for workers and prevention of violations and harm in the future. Second, there is great emphasis on evidence gathering. The stronger the evidence on issues, violations and risks, the easier it is to drive change with the contractor/factory. Therefore, any incident reported to the monitoring partners by workers is corroborated through multiple sources.

¹² See [Electronics Watch Monitoring Methodology Guidance](#) 1.0 (2020) for full details.

It should be noted that the methodology has not been drafted to mitigate reputational risk for a company, but to identify and address the issues facing workers¹³. The monitoring partners who undertake the research, develop trust with the workers and are experienced labour rights monitors.

Good Practice:

- The monitoring process should have the goal of improving worker rights and not the objective of reputational risk mitigation for the company.
- The power imbalance between workers and management should be specifically addressed when it comes to designing systems to generate complaints and grievances. Using an independent organisation to do this is useful.
- The monitoring process should be continuous.
- The workers should be part of designing the remedial and corrective actions and be able to report on the performance of the company on agreed actions.

3.1.6 Resolving Challenges through Industry Engagement

As noted earlier, companies are not members or affiliates of Electronics Watch. As an independent coordinator, Electronics Watch leverages the buying power of its affiliates to drive change within the electronics industry. This is not necessarily an adversarial process, and collaboration, dialogue and training are part of the engagement between Electronics Watch and industry. The goal for Electronics Watch is to improve worker conditions, and Electronics Watch does not aim to ‘name and shame’ companies where workers’ rights violations are reported.

Electronics Watch works with the industry through the Responsible Business Alliance (RBA), through a formal agreement enshrined in the [Terms of Engagement](#), which are reviewed regularly and revised as required. The RBA members are expected to meet internationally recognised codes and worker rights and strengthen worker’s capacity to defend their rights. These terms of engagement come into play when Electronics Watch issues a report on worker rights violations or issues for a specific member of the RBA. The agreement provides for a defined process, responsibilities and time line to the RBA and its members to improve compliance when issues are reported.

In addition to working with companies/contractors, Electronics Watch also encourages public buyers to drive change with suppliers/companies through engagement on contractual obligations. Electronics Watch brings the issues raised in the monitoring process to the public buyers, so the latter can raise these issues with their contractor.

Good Practice:

- While a collaborative solution to issues identified is preferred, buyers should not hesitate in using their own leverage to drive change in the industry when corrective actions are not suitably undertaken by the company/contractor.
- Agree on a framework that outlines responsibilities and timelines drives change in the industry, where all parties are aware of the actions required of them, when a complaint is issued.

¹³ For more details see *Flagship Lab: [Lessons from Electronics Watch](#) (2023)*

3.1.7 The Monitoring & Reporting Process

Worker-driven monitoring can start with the reporting of a grievance to a local monitoring partner (through both in-person and electronic means). The grievance is investigated by the local partner. Where corroborating evidence is found, the findings are issued in a report. This is then communicated to the concerned company (or the RBA) and the concerned affiliate is notified at the same time.

The report findings are discussed with the company, focusing on the issue/violation and the dialogue moves towards addressing how the issue can be resolved, remedied and agreeing on the corrective actions that need to be undertaken. Throughout this process, monitoring continues, and constant engagement with the work force (whether through a trade union or key workers) is maintained. This includes information on the company's actions during the remediation process. After corrective action and remedies have been undertaken, a second report is prepared and shared with the affiliate. A final report is then released to the public.

The first report is the starting of the process of improvement with the company. If the first engagement does not produce improvements, then the affiliate (public buyer) is involved in exercising its contractual authority/leverage with the contractor to ensure raised issues are addressed.

Good Practice:

- Monitoring should be considered as a means to an end, to effect change. Therefore, the monitoring report is not the end-product, but the basis to pursue change in practices in companies and factories.
- Reports need to be evidenced based, outlining the risk and issues being faced in as detailed a manner as possible.
- Collaborative corrective action plans must be designed, and their implementation monitored on a continuous basis.

3.1.8 Key Policy Documents & Tools

Electronics Watch has developed a number of guidance documents and contract templates that can assist buyers in designing their procurement contracts. The [Public Buyer Toolkit](#) includes:

- Affiliate Product Form: To collect data on products procured by affiliates, to map the links between affiliates, products, and brands
- Instruction to Contractor: A template tool to provide contractors with a succinct overview of the Electronics Watch led compliance process
- Template Letter to Suppliers: For contractors to easily communicate their request for suppliers to cooperate in meeting the contract conditions.
- Factory Disclosure Form & Guidelines for Factory Disclosure: For brand companies in reporting the factories that make the goods and the main components of the goods that form the subject matter of the contract.
- Transparency and Data Use: The How, Who, and Why of Disclosure

3.2 Impact

Electronics Watch's work has led to a number of improvements for workers in the electronics sector, [with Impact Stories](#) highlighting changes in working conditions for employees in some of the largest

private sector electronics manufacturers. For example, universities of Leeds, Leicester and Edinburgh (Electronics Watch affiliates) had purchased HP workstations. Through the worker-driven monitoring undertaken by Electronics Watch, violations were found at factories in [Czech Republic](#). By working with the contractor, corrective actions addressing predictable working hours, change in shift timing, minimum guaranteed wages and secure employment contracts were undertaken by the factory. Regional risk assessments (such as the one for [Hungary](#)) provide purchasers with clear considerations to address in their contracts going forward.

Using a worker-driven monitoring approach, coupled with the leverage of purchasing power, provides for meaningful impact on the ground. This is particularly relevant for complex supply chains, where the power of the lead firm to monitor all activities across its supply chain may be limited.

3.3 Key Considerations in Designing Monitoring Policies

For purchasers considering using a worker-driven monitoring process, this section outlines some key considerations

3.3.1 Identifying Buyer Priorities

A number of factors determine purchase tenders and contracts, with price and delivery times being a key component. While purchasers may have an expectation that labour rights will be respected, they may not fully appreciate that is not always guaranteed. In determining a company's commitment to RS practices, the management should carefully consider and articulate their priorities. Where there is an assumption that trade-offs may exist between factors (such as price and fair wage for example), the company should consult with experts to determine if their assumption is correct. Worker rights should be a priority and should not be a 'secondary' consideration in designing procurement contracts. Instead, these should be part of the selection and award criterion.

3.3.2 Choose an Independent Coordinator

Companies may have large procurement departments, but they may not always have the resources (human & financial) allocated to conduct and manage monitoring processes. In addition, monitoring and remediation require a specific skill set and training. Choosing instead to partner with an independent specialised monitoring coordinator allows the firm to get support to conduct these actions from an expert group. However, it is important to note that companies retain their individual responsibility to conduct human rights and environmental due diligence. Where multiple firms choose the same coordinator, this assists in the pooling of resources for greater efficiency and contractor coverage.

3.3.3 Balancing Local & International Standards

Many lead/brand firms have headquarters in OECD countries, with high labour standards. Their contractors however can be in operating regions where local legislation may have lower thresholds or compliance is weak. In addition, labour standards and what are considered acceptable working conditions also varies across regions. In setting out contractual obligations for suppliers, a buyer must be aware of these discrepancies. However, the aim should always be to set the highest standard rather than the lowest. At the same time, the buyer should be aware of the limitations in regions and not promote unachievable standards for their contractors, without willing to support capacity development and training. In some cases, a phased approach with incremental improvements over a defined period of time, is recommended as this is more likely to bring meaningful change for workers.

3.3.4 Using Contracts for Performance

The actions required of contractors should be practicable. This involves setting out clear expectations, timeframes and actions. Using contract-based language also prepares contractors for better compliance and providing evidence. These include clearly articulating what is considered as protection of worker rights, what is considered a violation, what is quantified as a remedial action. In addition, the practicable actions include the consequences of non-compliance and the arrangements the buyer can make where remedial actions are not undertaken. The use of a contract to draft these definitions and actions allow for both signing parties to be protected in case of non-compliance or unimplementable demands.

3.3.5 Training & Staff Development

Labour rights is a complex subject and is heavily influenced by local socio-economic conditions and the political context of the country. In addition, the nature of electronics supply chains means there the financial and management behaviour of the contractor will affect the conditions on the factory floor. For example, where management is focused on time delivery, they may be prone to sacrificing worker rights as they are not willing to pay the penalty for late shipments. Procurement staff at lead firms (contract drafters) require training to understand these complex patterns as well as the ‘butterfly’ effect, where their actions may have unintended consequences for workers in different regions. Therefore, time and effort should be spent on training company staff on how their purchasing practices affect worker rights and how improving working conditions can be instituted through purchase contracts.

Additional Resources:

- Electronics Watch: For Public Buyers; [Contract Conditions](#)
- Electronics Watch: For Public Buyers; [Contract Performance & Due Diligence](#)
- Electronics Watch: [Public Buyer Toolkit](#)
- RE-SOURCING Report: [State of play & roadmap concepts: Electronics \(2021\)](#)
- RE-SOURCING Flagship Lab: [Lessons from Electronics Watch \(2022\)](#)
- RE-SOURCING Roadmap Workshop: [Electronics Sector \(2022\)](#)

4 Resource Efficiency & Product Longevity

RS refers to the respect of human rights and the observance of sustainable practices in the extraction, production and recycling of the products we consume. One aspect of this responsible behaviour is the efficient use of resources. Resource efficiency refers to using minerals in a sustainable manner, throughout the life cycle of a product. This can result in: 1) less (virgin & recycled) minerals being used in the manufacturing of a product and 2) reducing consumption of products by increasing their life span.

The life cycle approach is increasingly being seen in a number of sectors (see examples in [Renewable Energy](#) and [Mobility](#) sectors), where mineral use efficiency is sought from the very start at the product design stage. Contained within the life cycle approach, there is also a need to understand the lifespan of a product, particularly in the electronics sector where brands tend to launch new products regularly (in many cases on an annual basis)– this is particularly true for smartphones.

This good practice case, based on the [Fairphone](#), looks at improving the lifespan of smartphones, and creating a longevity metric to track the lifetime of a phone in use by a consumer. A longevity score is of benefit to the producer as well as researchers focused on the circular economy practices of companies.

4.1 Business Case

Around 1.4 billion smartphones are sold each year, with an average use-span of 2-3 years. In 2022, global ICT related emissions accounted for almost 6% of annual GHG emissions, expected to rise to 14% under some scenarios in the future. Within the ICT industry, smart phones accounted for 11% of GHG emissions in 2020. Only 20% of these phones are reused or recycled, with electronic waste being one of the world's fastest growing waste streams¹⁴.

To reduce the environmental impact of smartphones, the key approach is to increase the longevity of these devices, since 75% of the impact is caused in a smartphone's production phase¹⁵. Doubling the average lifespan of a device roughly halves the environmental impact compared to other devices on the market. Where smartphones are used for a longer period of time, less devices would need to be manufactured. Given that the largest share of the environmental impact during a smartphone's life cycle is generated in its production¹⁶, a reduction in production numbers will also lead to the largest reduction in the environmental impact of our smartphone usage from a life cycle perspective.

4.1.1 The Good Practice Principle

To create a smartphone that will be used for a longer timespan requires two ingredients: 1) the physical device must be supported and resilient and 2) consumers must be willing to use it for a longer time period. The good practice principles in this case study address both aspects by:

1. Modular product design to increase lifespan, allowing for easy replacement and repair of parts
2. Compatible software that allows for the product to continue to be operational, when software updates and changes occur
3. Provide an eco-system to support the repair, re-use and recycle of the product that is not cost prohibitive
4. Developing consumer trust in the product, to change consumer behaviour over the long term.

4.1.2 Guideline Scope & Contribution

The guidance in this section is primarily addressed towards manufacturers of smartphones and other personal electronic devices that tend to be replaced quickly when upgrades/updates are made available. These update cycles can be as short as two to three years. The considerations on determining a methodology to measure the longevity of a device would be useful to any organisation looking to establish 'lifespan of product' as a sustainability metric and those wanting to reduce their material footprint.

The case study is based on [Fairphone](#), which was founded in 2010 as an awareness campaign about conflict minerals. By 2013, the organisation evolved from campaigning to manufacturing ethically sourced smartphones. In 2021, the company brought its fourth-generation smartphone to markets.

¹⁴ Source: Flagship lab: [Lessons from Fairphone's Longevity Score](#) (2023)

¹⁵ Source: <https://www.fairphone.com/wp-content/uploads/2022/07/Fairphone-4-Life-Cycle-Assessment-22.pdf>

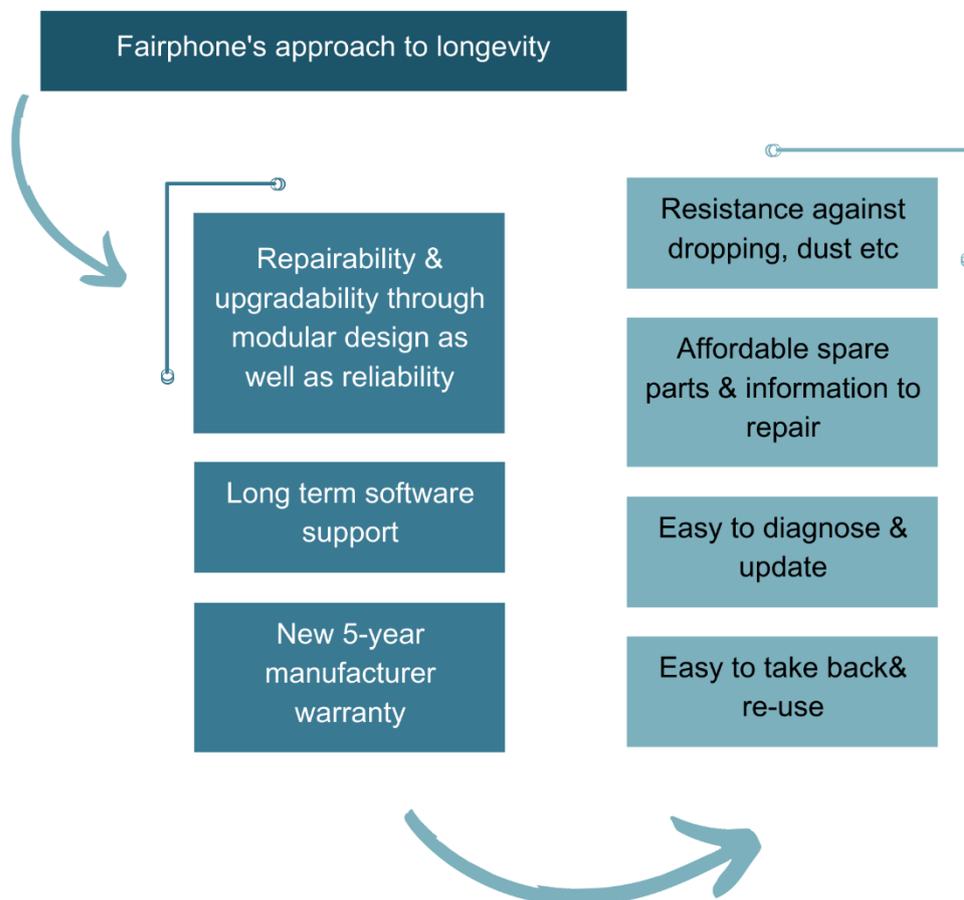
¹⁶ Source: Flagship lab: [Lessons from Fairphone's Longevity Score](#) (2023)

The Fairphone philosophy focuses on creating a positive impact on four areas: fair materials; fair factories; longevity and take-back of electronic waste. This case study examines the good practice in one particular area: longevity.

4.2 Designing Longevity in Electronic Devices

The longevity of a device is established by two principles: First is the attitude of the consumer towards the device; the more positive the attitude the more likely they will continue to use it over time. The attitude is largely informed by the physical durability of the product and then by the emotional durability. The second principle comes from the consumer's trust in the provider of the device. This trust is developed by the support services available for its maintenance and upgrades. Where these two principles are achieved, a smartphone is more likely to achieve longevity. It should be noted that the functionality of the product, specifically software functionality is essential for the longevity of a product: many electronics are replaced due to planned obsolescence, with software being no longer compatible.

Figure 3 Fairphone's approach to product longevity



Source: Adapted from Flagship lab: [Lessons from Fairphone's Longevity Score \(2023\)](#)

4.2.1 Creating a Resilient Device

Creating a modular design: By designing a resilient, modular product from the beginning, repairs and upgrades are easier, supporting its longevity. The following considerations go into creating a modular design:

- **Reliability:** The construction of the product is robust, allowing for minimal or no damage to the device if it falls, there is resistance to dust and other factors that can have a detrimental impact in daily use.
- **Diagnosis & Update:** Given the modular nature of the product, the design allows for easier diagnosis of which product is failing. This allows for components to be replaced as needed and the entire handset does not need to be replaced.
- **Affordable spare parts and repair services:** Where parts do need to be replaced, the cost of the replacement is not prohibitive nor encourages consumers to buy new products. For example, the batteries for smartphones need to be replaced at regular intervals. Rather than replacing the entire handset, the modular approach allows for the battery to be replaced easily and at a fair cost. In addition, information on how to conduct repairs is readily available, such that a customer is not forced into expensive and exclusive customer care services. In most cases, the user can repair the device themselves.
- **Take-back & reuse:** An easy to execute take-back policy is provided with the phone, such that clients are able to trade-in or return phones to the manufacturer. This allows for reuse, refurbishment and module harvesting from the phones as well as ensuring that the mineral resources are brought back into industrial production loop through recycling, if reuse is not possible.

Long-term software support: Another key component for increased longevity is focused on the software of the smartphone's operating systems. Long-term software support ensures that devices do not need to be replaced simply because newer versions of their operating systems have become incompatible with the chips/hardware of the set. Through long-term software support, the operating system software can be updated to newer versions and thereby remains compatible with newer/upgraded apps, again to address the incompatibility issue that usually leads to the replacement of handsets.

Manufacturing warranty: A five-year manufacturing warranty is provided, thereby encouraging users to have their phones repaired rather than replaced.

Good Practice:

- From the design stage, ensure that devices are resilient and lend themselves to repair and upgrades and not to disposal.
- Ensure the eco-system supports repair and upgrade choices and is not cost prohibitive relative to replacing the device.
- Provide for end of life support services to ensure recycling and/or re-use of device
- Provide software support, such that devices continue to be compatible with software updates.

4.2.2 Developing a Longevity Score

Fairphone, based on a life cycle approach, was able to bring to market a smartphone that had the characteristics of being a resilient product, which should have longevity. In order to measure the longevity, Fairphone created a longevity scoring mechanism. The following steps are involved in establishing this score (Table 2):

First, determine the number of active and inactive Fairphones in use. This is done by pinging all devices that were activated, meaning they connected to the internet before. If a device responds, it is marked as active. If no response is noted within 30 days, it is marked as inactive.

The second step is to establish the number of years that the device is expected to be used. This calculation has two components. The first is the actual life time, which is measured from the date from when the phone was first activated to the day on which it has last responded to Fairphone’s ping. The activation date is available to Fairphone as the first time when the device connected to the internet. The second part of this calculation comes from the expected use of the product in the future. This data is collected through a survey mechanism. On a 6-monthly basis from the moment of activation, Fairphone surveys its active users (through the MyFairphone app) on how long they intend to continue using their devices. In the same survey Fairphone asks the active users why they respond this way to obtain data enabling the company to focus on supporting their active users better on critical topics which might otherwise make them replace their phones soon.

The collected data is then used to calculate the longevity score for the device. The measured lifespan of active and inactive phones. This is then merged with the expected lifespan of the active/inactive phones, to give an average expected lifetime for Fairphone devices.

Table 2: Calculating the longevity score

Total phones brought to market		
Active	84.3%	
Inactive	15.7%	
Years of use		
	Actual lifetime (measured)	Expected lifetime (through survey)
Avg. active phones	1.08 yrs	5.4 yrs
Avg. inactive phones	0.63 yrs	0 yrs
Calculating longevity score		
Actual lifetime	$1.08 \text{ yrs} \times 84.3\% + 0.63\% \times 15.7\%$	1 yr
Additionally expected life	$5.4 \text{ yrs} \times 84.3\% + 0 \text{ yrs} \times 15.7\%$	4.5 yrs
Longevity score		5.5 yrs

Source: Example based on data for Fairphone for 2021. See [Flagship Lab](#) for more details.

Fairphone intends to release the full methodology for the calculation of longevity scores in 2023. From the example given, a critical component of establishing longevity is to capture the information on how long consumers intend to use a product.

Good Practice:

A key to determining product longevity is to be able to capture consumer opinion on how long they intend to use a product. Along with gaining insights into the struggles of the users, this helps to focus on the right support topics to encourage longer use of the product.

4.3 Impact

Fairphone through its longevity approach has been able to bring to market a product that is used over a longer period of time, compared to other smartphones in the market. According to their data, a higher percentage of Fairphones being used for a specific period of time are still active in comparison to the share of other phones of the same age on the market (**Error! Reference source not found.**).

The longevity of Fairphones has helped the company to reduce the environmental impact of smartphone usage. The company calculates to have avoided 8 tons of e-waste (42% of which due to the longevity of the smartphone). 84% of Fairphone’s 668 tonnes of avoided CO2 emissions in 2021 were linked to decreasing the need for phone production and transport¹⁷.

Table 3: Longevity of Fairphone against market average

Age of active device	Others	Fairphone
1 year	74%	85%
2 years	44%	81%
1 to 5 years	69%	80%

Source: Flagship lab: [Lessons from Fairphone’s Longevity Score \(2023\)](#)

4.4 Key considerations in increasing product lifespans

4.4.1 Product Design Choices

A key consideration is to design a product that has longevity built into it from the start of the design cycle, rather than as a consideration at product manufacturing or sale points.¹⁸ These considerations should include designing around existing limitations, such as:

- Limited durability of standardized components, such that they are expected to break/stop functioning within a limited time period.
- Where batteries form part of the product, repeated charging naturally leads to decreasing capacity of the battery. Thus, battery replacements should be considered necessary maintenance and treated as such in the design stage.
- Where software is needed for the functionality of the device (all ‘smart’ devices, including e.g. cars and washing machines), the period of software support needs to be aligned with the envisioned lifespan of its hardware to ensure full functionality and thereby use of the product
- Marketing and promotion campaigns that encourage consumer behaviour to replace existing functional products with the newest technology
- Lack of cost-effective and easily accessible repair options, with some products need to be replaced if they develop a fault, rather than being repaired.

4.4.2 Consumer Trust & Behaviour

To design for consumer behaviour changes, building trust with the consumer is essential. Where consumers have faith in the product and the support eco-system that comes with it, consumers are more likely to change their traditional patterns (replacing smartphones every two to three years) and purchase products that they trust to be usable for a longer time period. Consumer trust does not come from physical durability of the device only, but also the ease with which the products can be repaired and used – referred to as emotional durability.

¹⁷ Source: Flagship lab: [Lessons from Fairphone’s Longevity Score \(2023\)](#)

¹⁸ For a detailed discussion on product design considerations see RE-SOURCING Briefing Document: [Designing for Responsible Sourcing \(2022\)](#)

4.4.3 Measuring Longevity

In designing a product, a manufacturer may be able to specify the intended life of the product. This will largely be based on the durability of the components that go into its manufacturing. However, the actual use of the product, i.e. how long consumers will continue to use it, may be different. The consumer behaviour will be determined by ease of use, ease of repair, support available, costs associated with repair and upgrades as well as emotional attachment to the product. A manufacturer seeking to increase the longevity of its products needs to take these into consideration.

In addition, depending on the nature of the device (smartphone users are more easily accessible through apps) asking the consumer on their intended use may bring insight into the active use life span for a product and how to increase it.

Additional Resources:

- RE-SOURCING Report: [State of play & roadmap concepts: Electronics \(2021\)](#)
- RE-SOURCING Flagship Lab: [Lessons from Fairphone's Longevity Score \(2022\)](#)
- RE-SOURCING Roadmap Workshop: [Electronics Sector \(2022\)](#)
- RE-SOURCING Briefing Document: [Designing for Responsible Sourcing \(2022\)](#)

5 Conclusion

The good practice cases discussed in this document address different challenges in the EEE Sector value chain. To re-cap:

Supporting improvements in working conditions: This case study considered the Responsible Mica Initiative's approach to supporting some of the poorest workers in the mica supply chains, by working with mica processors to improve working conditions. In addition, RMI initiated parallel work streams to address the socio-economic conditions of the workforce by working with villages and to improve the regulatory environment by working with governments where informal mica collection takes place.

Empowering the workforce: This case study looked at the case of Electronics Watch, which leverages the power of public procurers to drive change in the working conditions in the electronics industry. Using contractual obligations as a tool for implementation, the independent coordinator uses a worker-driven monitoring methodology to empower the workers to raise and report issues, be involved in designing remedies and then monitoring the actions of the companies in addressing those remedies.

Resource efficiency & product longevity: The final case from Fairphone discussed mineral resource efficiency, by creating a resilient smartphone that relies both on product durability and consumer trust. Fairphone created a longevity score to evidence the lifespan of its device, based on actual lifetime and expected lifetime. The results indicated a longer use period for Fairphones than the average market, leading to avoided CO2 by the company, by preventing phone production.

Two of our cases have dealt specifically with worker rights, while the third looks at resource efficiency. However, all three share a few common threads.

Clarity of objective is paramount

The successful RS approach is based on having clear objectives of what the company/entity wants to achieve. These objectives should be a reflection of its RS agenda and be internally driven and formulated. This does not mean that external guidance should not be included, but the good practice cases discussed here all point to an internalisation of the importance of RS, which is translated into objectives. Firms or governments need to clarify their internal objectives as this will influence their practices, commitments in contracts and the type and level of support they offer to firms in their supply chain.

Advantage of external independent coordinators

In two of our cases, it is clear that external coordinators are useful for firms for two main reasons: First protecting labour rights can be a complex issue and requires trained staff and monitors to ensure compliance with high international standards. Second, given the complex nature of electronic supply chains, independent coordinators can pool resources from multiple lead firms and address issues for multiple chains.

Reporting templates & processes should be well designed

All three cases have well designed reporting methodologies and templates. Whether it is blockchain platform developed by RMI, the model contract by Electronics Watch or the longevity score by Fairphone, all three cases look at developing evidence to support their RS practices.

Stepping away from silos in designing practices

One common theme noted across the best practice cases is a unified approach to sustainability and RS. Worker rights are contextualised within their socio-economic conditions, protection of rights is based in empowerment and product longevity is based within consumer behaviour patterns. None of the cases exhibit compartmentalisation – a focus only on the environment or on community issues. It is clear that RS is an overarching agenda and the approaches need to step away from silo thinking. While individual objectives and actions can focus on particular issues, the approach needs to be wider and illustrate inter-connectivity.

The future of doing business

While different governments and companies are moving at different paces to address Climate Change and sustainability issues, it is important to recognise that they are all moving in the same direction. RS approaches ingrained in business practices will become more common. While initially successful RS approaches may set a company or a government apart, in the medium term these approaches are expected to become normal operating procedures. The better the uptake of RS practices, the more level the playing field.



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