

## Acknowledgement

The CII GreenCo Rating System for E-Waste recyclers - Pilot Version has been made possible through the efforts of the Core Committee Members, dedicated volunteers and staff members. CII – Sohrabji Godrej Green Business extends its deepest gratitude to all these members.

1. Mr Ulhas Parlikar, Chairman, CII SRI India Program & Director, Geocycle Business
2. Dr L Ramakrishnan, Member, GreenCo Assessor Panel
3. Dr P Parthasarathy, Managing Director, E-Parisaraa Pvt. Ltd., Bangalore
4. Dr Anand Kumar, Scientist E, Central Pollution Control Board
5. Mr Michael Gasser, Scientist, EMPA, Switzerland
6. Ms Deepali Sinha, Managing Director, Sofies India
7. Mr Mani Vajipey, CEO and Founder, Banyan Nation, Hyderabad

We also extend our thanks and appreciation to the Steering Committee Members for their contributions towards the development of the CII GreenCo Rating System for E-Waste recyclers - Pilot Version.

1. Mr Laura Burger, Sofies India
2. Ms Rashi Agrawal, Partner, Banyan Nation, Hyderabad
3. Mr Prem Ananth, Regulatory Affairs Manager, DELL India
4. Mr Sanket Chauhan, Director, Ecocentric
5. Mr B K Soni, Chairman, EcoReco
6. Mr Ravi Shastry, CEO, Ecosible
7. Mr Salil Doshi, Associate General Manager-Service, Godrej & Boyce Mfg. Co. Ltd.
8. Ms Priti Kadam, Program Manager-Corporate Environment Affairs, IBM India
9. Mr Bose Varghese, Head – Green Initiatives, Infosys
10. Mr Andrew Almack, CEO, Plastics for Change
11. Mr D B Prabhu, Respose
12. Ms Wilma Rodrigues, Founder & CEO, Saahas Zero Waste
13. Mr Avinash Krishnamurthy, Chief Program Officer, Small-Scale Sustainable Infrastructure Development Fund (S3IDF)
14. Mr Dinni Lingaraj, Group Manager, Sustainability, Wipro Limited
15. Mr Bhagwati Suman, Founder, Auctus E Recycling solutions Pvt Limited
16. Mr Satish Sinha, Associate Director, ToxicsLink

*The development of the GreenCo Rating System for E-Waste Recyclers is supported by Swiss State Secretariat of Economic Affairs (SECO), Institute for Materials Science and Technology (Empa), World Resources Forum Association (WRFA) as a part of SRI India Program.*



---

**Table of Contents**

<b>S. No.</b>	<b>Title</b>	<b>Page Number</b>
<b>1</b>	<b>Introduction</b>	<b>3</b>
<b>2</b>	<b>Background of the Rating System</b>	<b>4</b>
<b>3</b>	<b>GreenCo Rating System for E-Waste Recyclers</b>	<b>5</b>
<b>4</b>	<b>General Aspects</b>	<b>7</b>
<b>5</b>	<b>Material Flow Management</b>	<b>37</b>
<b>6</b>	<b>Supply Chain Management</b>	<b>61</b>
<b>7</b>	<b>Environmental Aspects</b>	<b>77</b>
<b>8</b>	<b>CII GreenCo Rating for E-Waste Recyclers – Pilot Version Checklist</b>	<b>91</b>

## I. Introduction

CII – Sohrabji Godrej Green Business Centre, Hyderabad is CII’s centre of excellence in energy and environment, that aims to offer world class advisory services in the areas of energy management, green buildings, green companies, renewable energy, GHG inventorization, green product certification, waste management and cleaner production process. With the growing need for enhanced electronic waste management in the country, it is necessary to encourage environmentally responsible recycling of e-waste. To facilitate sustainable recycling in the Indian recycling industry, CII – Godrej GBC has developed the GreenCo Rating System for the E-Waste Recyclers – Pilot Version.

Sustainable Recycling Industries (SRI) program by the Govt. of Switzerland, builds capacity for sustainable recycling in developing countries. SRI improves local capacity for sustainable recycling together with private and public institutions, as well as the informal sector in India, Colombia, Egypt, Ghana, Peru and South Africa. The programme is funded by the Swiss State Secretariat of Economic Affairs (SECO) and is implemented by the Institute for Materials Science & Technology (Empa) and the World Resources Forum Association (WRFA).

CII – Sohrabji Godrej Green Business Centre (CII – Godrej GBC) is the country leader of SRI in India and the project is jointly implemented by CII – Godrej GBC, Toxics Link and Sofies India, with the technical support of EMPA. SRI India has been fortunate to have been receiving immense support from various other organizations from the government and private sectors, namely, MoEFCC, CPCB, BIS, DST, Geocycle, NEERI, several recyclers, manufacturers and producers.

The SRI India project aims to

- ❖ List the various identification and segregation methods of BFR plastics
- ❖ Identify an alternative mechanism for handling BFR plastics
- ❖ Conduct co-processing trials to identify feasibility of disposal of BFR plastics in cement kilns
- ❖ Develop technical standards for the handling, transport and safe disposal of BFR plastics
- ❖ Create a pilot take-back mechanism to segregate & prevent BFR plastics from entering the secondary value chain and implement a monitoring system
- ❖ Develop a voluntary rating system for e-waste recyclers that will serve as a holistic tool for monitoring performances of the e-waste recyclers

The CII GreenCo Rating System for E-Waste Recyclers – Pilot Version is also developed in line with the objectives of the SRI India program.

### ***Need for development of the GreenCo Rating System for the E-Waste Recyclers – Pilot Version***

Extended Producer Responsibility is the most important feature of the E-waste management rules 2016. With the applicability extending to every producer, consumer or bulk consumer, collection centre, dismantler and recycler of e-waste involved in the manufacture, sale,

purchase and processing of electrical and electronic equipment or components, the EWM rules 2016 has brought in a target-based approach for implementation of EPR. The role of recyclers is institutional in establishing efficient e-waste management. However, there is also a need to identify recyclers who will be able to systematically contribute to the implementation of the e-waste management rules. The uncontrolled recycling that continues to prevail in this sector, will have to be controlled, owing to its environmental and health hazards.

To deliver these national priorities with rigour and to assist different stakeholders in meeting their aspirations, there needs to be a transparent system that will reflect the true performances of recycling facilities. With a view of fostering this, CII Green Business Centre has developed the GreenCo Rating System for E-Waste Recyclers – Pilot Version which aims to catalyze sustainable recycling in the Indian E-Waste recycling industry.

## **II. Background of the rating system**

CII, with its vast experience of working with the Indian industry on several aspects, also has over a decade of hands-on-experience of working on various rating systems. CII follows a multi-stakeholder approach in the development of every rating system and ensures that they are developed by the industry and for the industry. The GreenCo Rating System initiative launched by CII – Sohrabji Godrej Green Business Centre in 2008, has evoked an overwhelming response from the Indian industry. 195 companies are GreenCo Rated and more than 450 companies are in different levels of implementation of the rating system. CII has adopted the same approach for the development of the GreenCo rating system for e-waste recyclers, wherein all representative stakeholders, including recyclers, bulk manufacturers, OEMs, associations, waste management experts, NGOs, etc. were approached for their inputs.

### ***Objectives of the GreenCo Rating System for the E-Waste Recyclers – Pilot Version***

The GreenCo Rating System for E-Waste Recyclers has been developed with the following objectives -

- ❖ To have a single performance monitoring system suited to Indian conditions also addressing international requirements
- ❖ To minimize and gradually eliminate hazardous material from e-waste being handled by the informal sector
- ❖ To create a more transparent assurance system of recyclers
- ❖ To identify the best dismantlers and recyclers, support them to cooperate and form the best recycling chains possible
- ❖ To support recyclers to constantly improve their internal processes, upstream and downstream partners
- ❖ To enable the recycling industry stay ahead of just compliance and be prepared for future market

### ***Focus areas of the GreenCo Rating System for the E-Waste Recyclers – Pilot Version***

While there are several priorities and requirements that need to be fulfilled by the E-Waste Recyclers, the GreenCo Rating System is holistic, comprehensive and all-inclusive of every critical aspect for e-waste recyclers. The focus areas of the rating system are majorly four and are briefly described below –

- ❖ *General Aspects:* The general aspects of the rating system aim to address basic, yet important requirements of operating any business and mainly E-Waste Recyclers. The general aspects address mandatory requirements that an e-waste recycler has to adhere to, requirements aligning to the operations of the facility, occupational ethics, occupational health and safety and risk cover.
- ❖ *Material Flow Management:* The material flow management aspect is one of the most critical aspects for e-waste recyclers. It addresses the bottom line for the recyclers and the resource conservation necessities of the society as a whole. The material flow management aspects cover requirements with respect to basic accounting systems, material balance and frequency, material flow monitoring systems, dismantling and recycling efficiencies.
- ❖ *Supply Chain Management:* Not just within the facility, the rating system extends its focus even into the supply chain. The supply chain aspects of the rating system address requirements that need to be followed with vendors, partners and service providers and during transportation of material and products. The aspect also gives credits to recyclers for implementing innovative projects and exhibiting exemplary performances over and above the requirement of the GreenCo Rating System.
- ❖ *Environmental Management:* No business should be carried out at the expense of the environment. The environmental management aspects cover the minimum and essential requirements that a recycler should meet with respect to safe and environment-friendly operating conditions, namely, energy efficiency, water conservation and waste management.

### **III. GreenCo Rating System for E-Waste Recyclers – Overview and Process**

The CII GreenCo Rating System for E-Waste Recyclers advocates a combination of systems and performances-based approach. It aims to provide leadership and guidance to recyclers on implementing certain important requirements as an e-waste recycler. The rating system is developed based on an iterative and consultative process that includes building partnerships with stakeholders and employing their cumulative experience and knowledge.

The rating system evaluates the performance of the e-waste recycler against the following parameters:

- ❖ General Aspects
- ❖ Material Flow Management
- ❖ Supply Chain Management
- ❖ Environmental Management

Credit points are assigned to varying degree of goals that are set for each of these parameters. The recyclers at various levels of efficiency are also suitably recognized in the rating system. As

a first step, the GreenCo Rating System for E-Waste Recyclers is being launched as a pilot version.

### **GreenCo Rating System for E-Waste Recyclers – Registration**

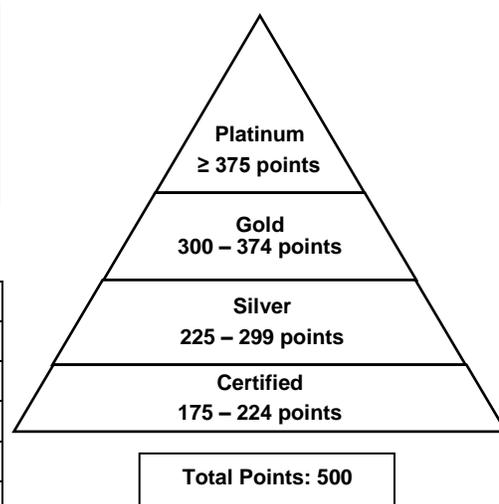
Companies interested in participating for the rating system can establish contact with CII – Godrej GBC by writing to [n.muthu@cii.in](mailto:n.muthu@cii.in) / [shiny.samuel@cii.in](mailto:shiny.samuel@cii.in).

The threshold criteria for certification levels are as following:

S. No.	GreenCo Rating Level	Points
1	Platinum	≥375
2	Gold	300 – 374
3	Silver	225 – 299
4	Certified	175 – 224

#### *Criteria and Weightages:*

S. No.	Parameters	Points
1	General Aspects	200
2	Material Flow Management	100
3	Supply Chain Management	100
4	Environmental Management	100
	<b>Total</b>	<b>500</b>



A training program would be organized for the companies registered for the GreenCo Rating. The objective of the training program is to aid the companies understand the rationale behind the various credit points. The company submits the filled-up rating questionnaire to CII.

Subsequent to the receipt of the assessment questionnaire, site visit will be conducted by a team of independent assessors and representatives of CII. The objective of site visit is to validate the data submitted as well as present to the company various improvement areas and opportunities. The rating will be communicated to the company by the Judges Panel.

The rating will be periodically communicated and will be in the website of CII – Godrej GBC. There would also be an annual review to revalidate the rating as well as guide the organization towards improvement. The rating is valid for 3 years and at the end of 3 years the companies will have to apply for the rating again. In between, if the company feels that they have improved their performances they can apply for a fresh rating. During the period of rating, the companies can use 'GreenCo' rated company in their letterheads and other corporate communication.

As a first step, CII – Godrej GBC is pleased to launch the CII GreenCo Green Company Rating System for E-Waste Recyclers – Pilot Version.

# GENERAL ASPECTS

## **Certificate of registration**

### **GA Mandatory Requirement 1**

#### **Intent**

To demonstrate the commitment of the company towards all compliances

#### **Compliance Approach & Methodology**

The credit will be assessed based on the following:

- ❖ Availability of the certificate of registration
- ❖ Proof of installed capacity of plant and machinery issued by the District Industries Centre or any other government agency authorized in this regard

#### **Documentation Required**

Copy of the registration certificate

## **Consent to establish and operate**

### **GA Mandatory Requirement 2**

#### **Intent**

To ensure legal compliances of the company

#### **Compliance Approach & Methodology**

The credit will be assessed based on the following:

- ❖ Availability of the consent to establish (under the red category)
- ❖ Availability of the consent to operate (under the red category)

The consents should have a clear mention of the various crucial aspects such as waste water, air emissions, hazardous waste and other general aspects. The consents should be supported with NOCs/periodic renewals as applicable

#### **Documentation Required**

Copy of the -

Consent to establish and operate from the respective State Pollution Control Boards

NOC if the unit wasn't established within a year of receipt of the consent

Periodic renewals of the consent as applicable to the unit

## **Authorization certificate**

### **GA Mandatory Requirement 3**

#### **Intent**

To demonstrate the commitment of the company towards all compliances

#### **Compliance Approach & Methodology**

The credit will be assessed based on the following:

- ❖ Availability of authorization for the collection / storage / dismantling / recycling of e-waste and its renewals as applicable

#### **Documentation Required**

Copy of the Form 1 submitted and authorization certificate

Copy of the renewal certificates

## **Authorization certificate under hazardous waste rules**

### **GA Mandatory Requirement 4**

#### **Intent**

To demonstrate the commitment of the company towards all compliances

#### **Compliance Approach & Methodology**

The credit will be assessed based on the following

- ❖ availability of the collection / storage and disposal of hazardous waste and its renewals as applicable

#### **Documentation Required**

Copy of the authorization letter in case it is not a part of the consent to operate

## **Records of e-waste handled and disposed**

### **GA Mandatory Requirement 5**

#### **Intent**

To demonstrate the commitment of the company towards all compliances

#### **Compliance Approach & Methodology**

The credit will be assessed based on the following:

- ❖ Records of e-waste handled and disposed and made available for scrutiny when asked for

#### **Documentation Required**

Copy of the Form 2 submitted

Copy of the records on quantities handled

## **Filed annual returns**

### **GA Mandatory Requirement 6**

#### **Intent**

To demonstrate the commitment of the company towards all compliances

#### **Compliance Approach & Methodology**

The credit will be assessed based on the following:

- ❖ Availability of filed annual returns by the refurbisher or collection centres or dismantler or recycler

#### **Documentation Required**

Copy of Form 3 submitted - Filed annual returns

## **E-waste manifest**

### **GA Mandatory Requirement 7**

#### **Intent**

To demonstrate the commitment of the company towards all compliances

#### **Compliance Approach & Methodology**

The credit will be assessed based on the following:

- ❖ Copy of the transport manifest system as per e-waste guidelines (three copies) with the transporter

#### **Documentation Required**

Copy of the transport manifest system as per e-waste guidelines (three copies) with the transporter

## **Awareness creation for employees in the areas covered under general aspects**

### **GA Mandatory Requirement 8**

#### **Intent**

Encourage recycling facilities to create awareness about the general aspects among all employees

#### **Compliance Approach & Methodology**

The credit will be assessed based on the following approach:

- ❖ Encourage recycling facilities to create awareness about the general aspects such as labour, health, safety and others among all employees and keep them informed about their rights
- ❖ Occupational health and safety policy

Awareness programs should be aimed at addressing all the employees in the facility

#### **Documentation Required**

A write up explaining the different awareness programs conducted during the year

Copy of Occupational Health and Safety Policy

## Facility Operation

### Collection

#### GA Credit 1.1

#### Intent

Encourage recycling facilities to ensure appropriate collection facilities and availability of suitable models

#### Compliance Approach & Methodology

The credit will be assessed based on the following approach -

Clearly defined collection models for the e-waste

- ❖ Individual collection model wherein the recyclers receive the e-waste directly from the producers
- ❖ Collective model wherein the recyclers get the e-waste through collection centres and other supply chain arrangements
- ❖ In case of own collection centres, define the working model of the collection centre
- ❖ Contribution to the take-back models of the producers that the recyclers work with

Credit	Description	Points
GA Credit 1.1	Collection	10

#### Documentation Required

Description of the e-waste collection model

Description of systems in case contribution is made to producers with their take-back models

**Facility Operation****Storage****Onsite/offsite storage****GA Credit 1.2.1****Intent**

To ensure that the recycling facilities have appropriate onsite and offsite storage spaces, facilities and records

**Compliance Approach & Methodology**

The credit will be assessed based on the following approach

- ❖ Availability of marked storage spaces for the collected e-waste either within the facility premises or beyond the facility in terms of warehouses
- ❖ The storage period of e-waste shall not exceed 180 days
- ❖ Record of collection and storage details shall be maintained and made available for inspection
- ❖ Storage space for dismantlers (minimum 300 square meter area for a dismantling capacity of 1T/day) and recyclers (minimum 500 square meter area for a recycling capacity of 1T/day) should be made available as per CPCB guidelines

<b>Credit</b>	<b>Description</b>	<b>Points</b>
GA Credit 1.2.1	Onsite/offsite storage	10

**Documentation Required**

Records that track the storage material movement in and out of the storage area or warehouse

**Facility Operation****Storage****Segregated storage of e-waste****GA Credit 1.2.2****Intent**

To ensure that the recycling facilities have appropriate segregation and storage of e-waste

**Compliance Approach & Methodology**

The credit will be assessed based on the following approach

- ❖ Appropriate containers should be used for storing different e-waste items separately to ensure that mixing of different kinds of e-waste does not occur

<b>Credit</b>	<b>Description</b>	<b>Points</b>
GA Credit 1.2.2	Segregated storage of e-waste	5

**Documentation Required**

Description of segregation models, in terms of documents and visible demonstration

**Facility Operation****Storage****Weatherproof covering****GA Credit 1.2.3****Intent**

To ensure that the recycling facilities have made provisions for weatherproof covering and protection of e-waste

**Compliance Approach & Methodology**

The credit will be assessed based on the following approach

- ❖ Weatherproof covering for storage and treatment areas to
  - minimize the contamination of clean surface
  - avoid contamination of rain water
  - facilitate the reuse of the complete material intended for recycling
- ❖ Weatherproof covering can be in terms of lighter protective material or a constructed roofed building
  - Storage occurs by product category - separate storage for batteries, capacitors with PCBs/PCTs, etc.

<b>Credit</b>	<b>Description</b>	<b>Points</b>
GA Credit 1.2.3	Weatherproof covering	10

**Documentation Required**

Documents supporting provision of weatherproof covering

**Facility Operation****Storage****Impermeable surfaces, leakage prevention and spillage collection facilities****GA Credit 1.2.4****Intent**

To ensure that the recycling facilities have made provisions for leakage prevention, spillage collection and impermeable surfaces

**Compliance Approach & Methodology**

The credit will be assessed based on the following approach

- ❖ Impermeable surfaces should be provided wherever required to prevent movement of liquids beyond the pavement surface. The impermeable surfaces should be connected to proper drainage systems
- ❖ Leakage prevention initiatives should be in place
- ❖ Spillage collection facilities to handle oil, fuel and acids spills should be provided appropriately

<b>Credit</b>	<b>Description</b>	<b>Points</b>
GA Credit 1.2.4	Impermeable surfaces, leakage prevention and spillage collection facilities	10

**Documentation Required**

Documents supporting provision of impermeable surfaces and drainage systems

Documents to support initiatives taken for leakage prevention

Documents to support provision of appropriate spillage collection facilities

**Facility Operation****Storage****Protection against unauthorized access****GA Credit 1.2.5****Intent**

To ensure that the recycling facilities have adequate protection against unauthorized access to e-waste

**Compliance Approach & Methodology**

The credit will be assessed based on the following approach

- ❖ Unauthorized persons should not access, add or remove possible equipment or parts without being monitored
- ❖ Access control should be provided to areas wherein equipment is stored, dismantled and recycled

<b>Credit</b>	<b>Description</b>	<b>Points</b>
GA Credit 1.2.5	Protection against unauthorized access	5

**Documentation Required**

Systems in place that prevents access to unauthorized personnel

## Facility Operation

### Dismantling and Segregation

#### GA Credit 1.3

#### Intent

To encourage the recycling facilities to have adequate provisions for safe dismantling and segregation of e-waste

#### Compliance Approach & Methodology

The credit will be assessed based on the following approach –

Provision of a designated space for dismantling and segregation

- ❖ Manual dismantling should only involve the of used electronic and electrical equipment where there is no likelihood for being in contact with hazardous substances
- ❖ An integrated facility should provide a mechanical dismantling facility to dismantle e-waste containing hazardous substances

Credit	Description	Points
GA Credit 1.3	Dismantling and Segregation	10

#### Documentation Required

Description of dismantling and segregation areas in case of manual dismantling

Systems that work to provide a mechanical dismantling facility

## Occupational Ethics

### Prohibition of employment of child labour

#### GA Credit 2.1

#### Intent

To bring in a commitment not to employ young children beyond the regulated working time and respective conditions

#### Compliance Approach & Methodology

The credit will be assessed based on the following approach –

No child who has not completed his fourteenth year shall be required or allowed to work

- ❖ A child after 14 years should provide a certificate of fitness and should be under the supervision of the facility incharge. Renewal of fitness certificate needs to be carried out once a year
- ❖ Children below 18 are not allowed to work in hazardous operations
- ❖ Adolescents between 14 and 18 years of age cannot be employed before 6AM and after 7PM and not for more than 4.5 hours a day
- ❖ Every child worker in the facility should be registered for name, details, shifts and nature of work

Credit	Description	Points
GA Credit 2.1	Prohibition of employment of child labour	5

#### Documentation Required

Child worker register and details

Log in and log out registers

Supporting documents on training provided

Details of supervisors assigned to young employees

**Occupational Ethics****Equal Remuneration****GA Credit 2.2****Intent**

To bring in a commitment to ensure equal remuneration is being provided for men and women employed in the facility

**Compliance Approach & Methodology**

The credit will be assessed based on the following approach –

Equal remuneration has to be paid to men and women workers for the same work or work of similar nature without any discrimination

*Note:*

- Remuneration is the basic wage or salary, and any additional emoluments whatsoever payable, either in cash or in kind, to a person employed in respect of employment or work done in such employment, if the terms of the contract of employment, express or implied, were fulfilled

<b>Credit</b>	<b>Description</b>	<b>Points</b>
GA Credit 2.2	Equal Remuneration	5

**Documentation Required**

Pay slips of employees

**Occupational Ethics****Minimum Wages****GA Credit 2.3****Intent**

To bring in a commitment to ensure at least minimum wages is provided for those employed within the facility

**Compliance Approach & Methodology**

The credit will be assessed based on the -

- ❖ Provision of minimum rates of wages payable to employees in the current currency, as instructed by the appropriate Governments (State or Centre), whichever is applicable

<b>Credit</b>	<b>Description</b>	<b>Points</b>
GA Credit 2.3	Minimum wages	5

**Documentation Required**

Pay slips of employees

**Occupational Health****Cleanliness****GA Credit 3.1****Intent**

To ensure clean and healthy working environment for employees

**Compliance Approach & Methodology**

The credit will be assessed based on the following approach -

Facilities should be kept clean by:

- ❖ Avoiding accumulation of dirt and refuse from floors, workrooms, staircases, passages, walls and partitions, ceilings, etc. through sweeping and washing
- ❖ Maintaining neat painted walls, doors and window-frames

<b>Credit</b>	<b>Description</b>	<b>Points</b>
GA Credit 3.1	Cleanliness	5

**Documentation Required**

Cleaning schedule

Painting frequency and schedule

**Occupational Health****Drinking water****GA Credit 3.2****Intent**

To ensure clean, safe and sufficient drinking water facilities for employees

**Compliance Approach & Methodology**

The credit will be assessed based on the following approach -

Clean and sufficient drinking water should be provided to employees, at -

- ❖ Multiple points
- ❖ Marked and labelled as drinking water in local language
- ❖ Placed at least 6m away from washrooms, drains, etc.
- ❖ Maintained at drinking water standards

<b>Credit</b>	<b>Description</b>	<b>Points</b>
GA Credit 3.2	Drinking water	5

**Documentation Required**

Details of drinking water facilities like taps/ dispensers

Drinking water analysis report versus standards

## Occupational Health

### Dust and fumes

#### GA Credit 3.3

#### Intent

To ensure provision and use of effective dust and fumes management systems

#### Compliance Approach & Methodology

The credit will be assessed based on the following approach

- ❖ Effective measures should be taken to prevent inhalation and accumulation of dust, fumes and other impurities through effective exhaust systems

Credit	Description	Points
GA Credit 3.3	Dust and fumes	5

#### Documentation Required

Description of exhaust systems provided for dust and fumes

## Occupational Health

### Lighting

#### GA Credit 3.4

#### Intent

To ensure adequate lighting provisions for employees in their work spaces and common facilities

#### Compliance Approach & Methodology

The credit will be assessed based on the following approach -

Every area of the facility that encounters people movement

- ❖ should be provided with sufficient and suitable lighting, natural or artificial, or both
- ❖ should be prevented from glare and formation of shadows
- ❖ should be ensured to avoid eye strains or any accidents to employees
- ❖ should adhere to State Government's standards on sufficient and suitable lighting for factories or for any class of description of factories or for any manufacturing process, if any

Credit	Description	Points
GA Credit 3.4	Lighting	10

#### Documentation Required

Documents to provide lighting levels in the work area

**Occupational Health****Overcrowding****GA Credit 3.5****Intent**

To ensure availability of adequate room for every individual working in the facility

**Compliance Approach & Methodology**

The credit will be assessed based on the following approach

- ❖ Rooms in the facility should not be overcrowded to an extent injurious to the health of the workers employed
- ❖ A minimum of 14.2m<sup>3</sup> of space for every worker should be provided and height more than 4.2m above floor level, as per Factories Act

<b>Credit</b>	<b>Description</b>	<b>Points</b>
GA Credit 3.5	Overcrowding	5

**Documentation Required**

Documents to highlight the space available per employee

## Occupational Health

### Toilets

#### GA Credit 3.6

#### Intent

To ensure clean and hygienic toilet facilities for the employees

#### Compliance Approach & Methodology

The credit will be assessed based on the following approach

Sufficient toilet facilities should be provided -

- ❖ With separate enclosures for male and female employees
- ❖ With adequate lighting and ventilation
- ❖ Maintained in clean and sanitary condition at all times
- ❖ With workers whose primary duty will be to clean and ensure cleanliness in toilets

Credit	Description	Points
GA Credit 3.6	Toilets	5

#### Documentation Required

Cleaning schedule

Substances used for cleaning

**Occupational Health****Ventilation and temperature****GA Credit 3.7****Intent**

To provide adequate fresh air ventilation and suitable working conditions for employees

**Compliance Approach & Methodology**

The credit will be assessed based on the following approach

Facilities should provide

- ❖ adequate ventilation through circulation of fresh air
  - In case of artificial ventilation, the number of air changes shall be given
  - In case of natural ventilation, the open window area with respect to the total area of the walls shall be given
- ❖ optimum temperature to provide reasonable conditions of comfort and prevent injury to health

Systems to carry out regular monitoring should be implemented to ensure adequate ventilation and temperature conditions.

<b>Credit</b>	<b>Description</b>	<b>Points</b>
GA Credit 3.7	Ventilation and temperature	10

**Documentation Required**

Documents to indicate fresh air circulation rate, temperature

Description of monitoring systems

## Occupational Health

### Working hours & rest hours

#### GA Credit 3.8

#### Intent

To ensure that the employees are employed for limited working hours and adequate rest hours is being provided

#### Compliance Approach & Methodology

The credit will be assessed based on the following approach

Workers should

- ❖ not work in the facility for more than forty-eight hours in any week
- ❖ not work in the facility for more than nine hours in any day, excluding overtime (in respect of overtime work, employees are entitled to wages at the rate of twice the ordinary rate of wages)
- ❖ not work for more than five hours before having a break of at least half an hour
- ❖ be provided with 24 hours rest after carrying out night shifts
- ❖ be provided with weekly holidays & National holidays
- ❖ be provided with compensatory holidays

Credit	Description	Points
GA Credit 3.8	Working hours and rest hours	5

#### Documentation Required

Log in and log out registers

Holiday calendars

**Occupational Health****Ergonomics and Working Conditions****GA Credit 3.9****Intent**

Provide ergonomically designed spaces to maintain health and provide comfort to workers

**Compliance Approach & Methodology**

The credit will be assessed based on the following approach

- ❖ Demonstrate that the working conditions provided are ergonomically designed
- ❖ Types of seating arrangement provided for workers
- ❖ Measures taken to eliminate standing working conditions for workers

<b>Credit</b>	<b>Description</b>	<b>Points</b>
GA Credit 3.9	Ergonomics and Working Conditions	5

**Documentation Required**

Description

Sample photographs

**Occupational Safety****Accident Reporting****GA Credit 4.1****Intent**

To ensure a no accident scenario through continuous monitoring and reporting of accidents to minimize and eliminate it over a period of time

**Compliance Approach & Methodology**

The credit will be assessed based on the following approach

- ❖ All accidents - missed, minor and major needs to be recorded, reported and extra caution has to be taken care of to avoid accidents

<b>Credit</b>	<b>Description</b>	<b>Points</b>
GA Credit 4.1	Accident reporting	5

**Documentation Required**

Register of accident reports

## Occupational Safety

### Hoists and lifts, excessive weights

#### GA Credit 4.2

#### Intent

To avoid injuries and consequence due to mishandling of heavy and/or dangerous equipment such as hoists, lifts and excessive weights

#### Compliance Approach & Methodology

The credit will be assessed based on the following approach

Employees should not be engaged to lift, carry or move any load so heavy as to be likely to cause an injury. Hoists and lifts should be

- ❖ of adequate strength
- ❖ maintained regularly supported with reports / test certificates for hoists and lifts, excessive weights
- ❖ sufficiently protected by an enclosure fitted with gates
- ❖ indicated with maximum safe working load
- ❖ equipped with safe opening and closing conditions

In case of manual lifting, a person cannot lift more than 20kg weight at a time

Credit	Description	Points
GA Credit 4.2	Hoists and lifts, excessive weights	5

#### Documentation Required

Details of hoists and lifts installation details

## Occupational Safety

### Precautions in case of fire, alarms, smoke detectors, fire extinguishers, hydrants and mock drills

#### GA Credit 4.3

#### Intent

To provide adequate awareness and facilities to respond to emergency situations within the facility

#### Compliance Approach & Methodology

The credit will be assessed based on the following approach

- ❖ Facility should take all practicable measures to prevent outbreak of fire and its spread, both internally and externally, and to provide and maintain-
  - safe means of escape for all persons in the event of a fire
  - the necessary equipment and facilities for extinguishing fire
- ❖ Facilities should also create adequate awareness for workers with the means of escape in case of fire and trained in the routine to be following in such cases
- ❖ Fire alarms and smoke detectors should be provided in the facility to:
  - detect fires
  - initiate alarms
  - activate fire isolation devices and/or fire suppression systems (and, for some systems, activate or shut down equipment)
- ❖ Periodic mock drills to be conducted to develop employee skills and evaluate adequacy of escape plan in case of emergency

Credit	Description	Points
GA Credit 4.3	Precautions in case of fire, alarms, smoke detectors and mock drills	10

#### Documentation Required

Purchase documents of fire protection devices

Emergency response plan in case of fire

Employees' awareness towards use of fire protection devices

Description of fire alarms and smoke detectors

Description and frequency of mock drills carried out

## Occupational Safety

### Use of Personal Protection Equipment (PPE) and first aid

#### GA Credit 4.4

#### Intent

To ensure availability of personal protection equipment providing minimum level of safety to employees and first aid facilities in case of an accident

#### Compliance Approach & Methodology

The credit will be assessed based on the following approach

- ❖ All personal protective equipment (PPE) should be provided and strictly used. Effective PPE should be provided for employees working at or near the process wherein there is a risk of injury to the individuals
- ❖ Readily accessible first-aid boxes with the prescribed contents
  - Number of boxes shall not be less than one for every one hundred and fifty workers ordinarily employed at any one time in the factory
- ❖ Nothing except the prescribed contents shall be kept in a first-aid box or cupboard
- ❖ Each first-aid box or cupboard shall be kept in the charge of a separate responsible person, who holds a certificate in first-aid treatment recognized by the State Government and who shall always be readily available during the working hours of the factory

Credit	Description	Points
GA Credit 4.4	Use of Personal Protection Equipment (PPE) and first aid	10

#### Documentation Required

Provision and description of PPE for all employees

Availability and use of first aid kit

## Occupational Safety

### Safety of buildings and machinery

#### GA Credit 4.5

#### Intent

To ensure that the buildings, machinery and other equipment in use are safe for employees to use and regular maintenance is undertaken

#### Compliance Approach & Methodology

The credit will be assessed based on the following approach

- ❖ Measures should be employed to ensure complete safety of buildings and moving/non-moving equipment in the facility.
- ❖ Regular servicing of all safety equipment and other equipment (Fire Extinguisher, Fire Hydrant Systems, Fume detection systems) should be carried out

Credit	Description	Points
GA Credit 4.5	Safety of buildings and machinery	5

#### Documentation Required

Description of safety measures taken in the facility

Documents to support regular services of all safety equipment and other equipment

**Risk Cover****GA Credit 5****Intent**

To encourage recycling facilities to have adequate provisions for accidents and natural calamities' insurance and employee insurance

**Compliance Approach & Methodology**

The credit will be assessed based on the following approach

- ❖ Adequate insurance cover provided for accidents and natural calamities
- ❖ Adequate insurance cover provided for employees

<b>Credit</b>	<b>Description</b>	<b>Points</b>
GA Credit 5.1	Accidents	10
GA Credit 5.2	Natural calamities	10
GA Credit 5.3	Employees	10

**Documentation Required**

Copies of insurance cover

# **MATERIAL FLOW MANAGEMENT**

## **Material Accounting System**

### **MFM Mandatory Requirement 1**

#### **Intent**

Demonstrate the material accounting system of the company for its input material and output products

#### **Compliance Approach & Methodology**

The credit will be assessed based on the following:

- ❖ Presence of a material accounting system including,
  - input
  - output
- ❖ Material accounting system can be any of the following,
  - basic material flow accounting board
  - computerized system
- ❖ Accounting to be updated weekly

#### **Documentation Required**

Description of the material accounting system

## **Material Balance Diagram**

### **MFM Mandatory Requirement 2**

#### **Intent**

Encourage the practice of maintaining a clear material balance diagram

#### **Compliance Approach & Methodology**

The credit will be assessed based on the following:

- ❖ Material balance diagram to be put in place deriving out of the material accounting system indicating product type, quantity and weight
- ❖  $\text{Inputs} = \text{Waste} + \text{Output}$

Material balance diagram to be updated on a weekly basis

#### **Documentation Required**

Description / flowchart describing the inventory and weighing process

## **Standard Operating Procedure**

### **MFM Mandatory Requirement 3**

#### **Intent**

Encourage recycling facilities to have detailed standard operating procedures for all major process activities

#### **Compliance Approach & Methodology**

The credit will be assessed based on the following approach -

- ❖ Clear SOPs for every major process activity should be made available and revisited as and when required

#### **Documentation Required**

Description of the SOPs of major process activities

**Material flow monitoring systems****Weighing bridge and weighing scales****MFM Credit 1.1****Intent**

To ensure that the recycling facilities have appropriate weighing infrastructure to account for its incoming material, in-house material use and outgoing material

**Compliance Approach & Methodology**

The credit will be assessed based on the following approach

- ❖ Adequate weighing infrastructure should be available
  - presence of a weighing bridge, calibrated once every year
  - presence of adequate weighing scales at all relevant stages, calibrated once every year

<b>Credit</b>	<b>Description</b>	<b>Points</b>
MFM Credit 1.1	Weighing bridge and weighing scales	5

**Documentation Required**

List of weighing scales with photos/receipts

Weighing bridge calibration certificate

## Material flow monitoring systems

### Systems

#### MFM Credit 1.2

#### Intent

To ensure that the recycling facilities have appropriate material flow monitoring systems

#### Compliance Approach & Methodology

The credit will be assessed based on the following approach

- ❖ Material flow monitoring system can be any of the following -
  - paper balance sheet
  - semi-automated computerized system
  - computerized system

Credit	Description	Points
MFM Credit 1.2	Material flow monitoring systems	5

#### Documentation Required

Description of the tool, what it captures, how to balance out the material

Sample report

**Material flow monitoring systems****Material flow traceability****MFM Credit 1.3****Intent**

To ensure that the recycling facilities have adequate methodologies and infrastructure to trace material flow

**Compliance Approach & Methodology**

The credit will be assessed based on the following approach

- ❖ Material flow traceability from product batch receipt to the end-fractions, ensuring product and fraction traceability

<b>Credit</b>	<b>Description</b>	<b>Points</b>
MFM Credit 1.3	Material flow traceability	5

**Documentation Required**

Description of the fractions captured, how the material is balanced by fraction

Description of process to follow the material batch from one particular client

Sample report

**Material flow monitoring systems****Material balance frequency****MFM Credit 1.4****Intent**

Encourage monitoring and updating the material balance on a regular basis

**Compliance Approach & Methodology**

The credit will be assessed based on the following approach

- ❖ Detail the frequency at which the mass flows are balanced

<b>Credit</b>	<b>Description</b>	<b>Points</b>
MFM Credit 1.4	Material balance frequency	5

**Documentation Required**

Sample report of the calculations

**Material flow monitoring systems****CCTV with backup greater than material balance frequency****MFM Credit 1.5****Intent**

Encourage the recycling facilities to have CCTV arrangement with backup facilities

**Compliance Approach & Methodology**

The credit will be assessed based on the following approach

- ❖ CCTV backup for at least 2x period of material balance frequency to check for any discrepancies or in case of errors/missing materials

<b>Credit</b>	<b>Description</b>	<b>Points</b>
MFM Credit 1.5	CCTV with backup greater than material balance frequency	5

**Documentation Required**

Description of CCTV systems available

**Dismantling efficiency****Refurbishment status from OEMs or senders****MFM Credit 2.1****Intent**

Encourage maximum refurbishment of the product at the OEM or senders' end before being sent for recycling

**Compliance Approach & Methodology**

The credit will be assessed based on the following approach

- ❖ Refurbishment status of material received from OEMs or senders should be maintained to ensure that the material has been refurbished to its maximum extent

<b>Credit</b>	<b>Description</b>	<b>Points</b>
MFM Credit 2.1	Refurbishment status from OEMs or senders	5

**Documentation Required**

Certificates from OEMs or senders

**Dismantling efficiency****Data destruction mechanism****MFM Credit 2.2****Intent**

To ensure that the recycling facilities have adequate data destruction mechanism in view of protecting the data rights of the OEM

**Compliance Approach & Methodology**

The credit will be assessed based on the following approach

- ❖ Availability of infrastructure for data destruction for those data-containing products

<b>Credit</b>	<b>Description</b>	<b>Points</b>
MFM Credit 2.2	Data destruction mechanism	5

**Documentation Required**

Description of the data destruction mechanism adopted with photos of the facility

**Dismantling efficiency****Equipment for dismantling and recycling****MFM Credit 2.3****Intent**

To ensure that the recycling facilities have appropriate equipment for dismantling and recycling e-waste handled within the facility

**Compliance Approach & Methodology**

The credit will be assessed based on the following approach

- ❖ Presence of the following basic equipment for dismantling and recycling -
  - baling machine
  - shredder for plastics
  - pallet roll
  - forklifts
  - other applicable equipment with respect to the type of e-waste handled

<b>Credit</b>	<b>Description</b>	<b>Points</b>
MFM Credit 2.3	Equipment for dismantling and recycling	5

**Documentation Required**

Description of the machinery and photos / receipt

**Dismantling efficiency****Material losses in the dismantling process****MFM Credit 2.4****Intent**

Encourage recycling facilities to account for the material losses that occur in the dismantling process for better monitoring and control of material use

**Compliance Approach & Methodology**

The credit will be assessed based on the following approach

- ❖ Maintain minimum material losses in the dismantling process, highlighting -
  - % material loss in every stage of the process

<b>Credit</b>	<b>Description</b>	<b>Points</b>
MFM Credit 2.4	Material losses in the dismantling process	5

**Documentation Required**

Description of the process followed for maintaining minimum % of material loss.

Sample document / sheet on material loss / recovery efficiency

**Dismantling efficiency****Disposal of products that are not allowed for recycling****MFM Credit 2.5****Intent**

To ensure that the recycling facilities have safe and authorized systems for the disposal of products that are not allowed / fit for recycling

**Compliance Approach & Methodology**

The credit will be assessed based on the following approach

- ❖ Identification and disposal of products that are not allowed for recycling
  - identification methods
  - list of such products
  - safe disposal methods

<b>Credit</b>	<b>Description</b>	<b>Points</b>
MFM Credit 2.5	Disposal of products that are not allowed for recycling	5

**Documentation Required**

Description of the process in place, who is in charge, training of the relevant staff members etc.

## **Recycling efficiency**

### **MFM Credit 3**

#### **Intent**

Encourage recycling facilities to monitor the recycling efficiency of the various products handled within the facility

#### **Compliance Approach & Methodology**

This section is divided based on product categories. The product categories considered include the following –

A – Cooling and Air conditioning

B – Other large "white" appliances

C – TV, monitors, LCD screen, plasma screens, digital photo frames

D – IT appliances, telephones, small household appliances, lighting fixtures (without lightbulbs), toys, Hi-Fi systems and all other equipment not included in the other categories

E – Discharge light sources: fluorescent lights and compact light sources

Points for this credit will be re-allocated for the various types of e-waste handled by the e-waste recycler. If the waste is covered in the hazardous waste authorization, the disposal method mandated by the authorization has to be followed. If no disposal method is mandated, the following credits will be applicable. If the waste is not reported to the SPCB, then the following respective credits will be applicable.

**Total Points: MFM Credit 3 = 50**

## Recycling efficiency

### A – Cooling and Air conditioning

#### MFM Credit 3A

##### Intent

Encourage recycling facilities to monitor the recycling efficiency of Cooling and Air conditioning products handled within the facility

##### Compliance Approach & Methodology

The credit will be assessed based on the following approach adopted for recycling of the various parts in cooling and air conditioning products

- ❖ *MFM Credit 3A.1 Cooling agents & ozone depleting substances*
  - Pre-recycling - Drain the cooling agent as well as any other Ozone Depleting Substance containing liquid/gas and store it in a leakage-proof container
  - Post-recycling - Send the cooling agent for reuse, or for elimination in an authorized facility
  
- ❖ *MFM Credit 3A.2 Polyurethane foam*
  - Pre-recycling - Separate and safely store the Polyurethane Foam
  - Post-recycling - Crush PU foam in a closed atmosphere environment to extract the Ozone Depleting Gases from the foam, send the PU form for reuse, to a high-temperature incineration facility (e.g. cement plant), or to a TSDF
  
- ❖ *MFM Credit 3A.3 BFR containing plastics*
  - Pre-recycling - Separate and safely store BFR-containing plastic fractions
  - Post-recycling - Sale of BFR-plastic to a customer in need for BFR-containing resins, or disposal of BFR-plastic in the TSDF / cement kilns
  
- ❖ *MFM Credit 3A.4 Compressor oils*
  - Pre-recycling - Recover compressor oils in leakage-proof containers
  - Post-recycling – Dispose-off the used oil as per the mandate in the hazardous waste authorization
  
- ❖ *MFM Credit 3A.5 Asbestos / asbestos-containing parts*
  - Pre-recycling - Separation and safe packing and labelling of asbestos / asbestos-containing parts
  - Post-recycling - Send asbestos-containing bags to the TSDF
  
- ❖ *MFM Credit 3A.6 Ferrous metals*
  - Pre-treatment efficiency to achieve Ferrous Metals: (product analysis with foreign fraction of plastic < 5%, of electronic circuit boards < 1% in weight)

- ❖ *MFM Credit 3A.7 Non-ferrous metals*
  - Pre-treatment efficiency to achieve Non-Ferrous metals: foreign fraction of plastic < 5%, of electronic boards < 1% in weight
  
- ❖ *MFM Credit 3A.8 Electronic circuit boards*
  - Pre-treatment efficiency to achieve Electronic circuit boards dry, without large structure or posterior panels. no refrigeration elements / no transformers / no lithium batteries, no electronic components >5 cm.
  
- ❖ *MFM Credit 3A.9 Non-recoverable materials*
  - Pre-treatment efficiency to achieve non-recoverable material: foreign fraction of plastic < 10%, metals < 5%, electronic boards < 0.5%
  
- ❖ *MFM Credit 3A.10 Plastics*
  - Pre-treatment efficiency to achieve Plastics: plastic fraction amount > 75 in weight, with foreign fraction of Max 5% of rubber - Max 5% of glass - Max 5% of wood - Max 1% foam - Max 15% of metals (including cables and electronic circuit boards)

### **Documentation Required**

Sample measurements, description, photos (As applicable)

## Recycling efficiency

### B – Other large "white" appliances

#### MFM Credit 3B

#### Intent

Encourage recycling facilities to monitor the recycling efficiency of Other large "white" appliances handled within the facility

#### Compliance Approach & Methodology

The credit will be assessed based on the following approach adopted for recycling of the various parts in other large "white" appliances

- ❖ *MFM Credit 3B.1 Mercury containing parts*
  - Pre-recycling - Separation of mercury-containing lights and other mercury-containing parts
  - Post-recycling - Treatment of mercury-containing fractions as per the corresponding post-recycling criteria in the category Discharge light sources
  
- ❖ *MFM Credit 3B.2 Batteries*
  - Pre-recycling - Separation of batteries
  - Post-recycling - Send normal batteries to an authorized battery recycler (not TSDF)
  
- ❖ *MFM Credit 3B.3 BFR containing plastics*
  - Pre-recycling - Separate and safely store BFR-containing plastic fractions
  - Post-recycling - Sale of BFR-plastic to a customer in need for BFR-containing resins, or disposal of BFR-plastic in the TSDF / cement kilns
  
- ❖ *MFM Credit 3B.4 Compressor oils*
  - Pre-recycling - Recover compressor oils in leakage-proof containers
  - Post-recycling – Dispose-off the used oil as per the mandate in the hazardous waste authorization
  
- ❖ *MFM Credit 3B.5 Asbestos / asbestos-containing parts*
  - Pre-recycling - Separation and safe packing and labelling of asbestos / asbestos-containing parts
  - Post-recycling - Send asbestos-containing bags to the TSDF
  
- ❖ *MFM Credit 3B.6 Ferrous metals*
  - Pre-treatment efficiency to achieve Ferrous Metals: (product analysis with foreign fraction of plastic < 5%, of electronic circuit boards < 1% in weight)

- ❖ *MFM Credit 3B.7 Non-ferrous metals*
  - Pre-treatment efficiency to achieve Non-Ferrous metals: foreign fraction of plastic < 5%, of electronic boards < 1% in weight
  
- ❖ *MFM Credit 3B.8 Electronic circuit boards*
  - Pre-treatment efficiency to achieve Electronic circuit boards dry, without large structure or posterior panels. no refrigeration elements / no transformers / no lithium batteries, no electronic components >5 cm.
  
- ❖ *MFM Credit 3B.9 Non-recoverable materials*
  - Pre-treatment efficiency to achieve non-recoverable material: foreign fraction of plastic < 10%, metals< 5%, electronic boards < 0.5%
  
- ❖ *MFM Credit 3B.10 Plastics*
  - Pre-treatment efficiency to achieve Plastics: plastic fraction amount > 75 in weight, with foreign fraction of Max 5% of rubber - Max 5% of glass - Max 5% of wood - Max 1% foam - Max 15% of metals (including cables and electronic circuit boards)

### **Documentation Required**

Sample measurements, description, photos (As applicable)

## Recycling efficiency

### C – TV, monitors, LCD screen, plasma screens, digital photo frames

#### MFM Credit 3C

#### Intent

Encourage recycling facilities to monitor the recycling efficiency of TV, monitors, LCD screen, plasma screens, digital photo frames handled within the facility

#### Compliance Approach & Methodology

The credit will be assessed based on the following approach adopted for recycling of the various parts in TV, monitors, LCD screen, plasma screens, digital photo frames

- ❖ *MFM Credit 3C.1 CRT / LCD / plasma processing*
  - Pre-recycling
    - Cutting / shredding / separation of funnel and panel glass in controlled environment (sealed vacuum dismantling platform, air suction system followed by cleaning through bag filter etc.)
    - For CRTs: operations to occur in low vacuum (650 mm of Hg) chambers with dust capture and treatment
    - For LCD/plasma: sealed vacuum dismantling platform
- ❖ *MFM Credit 3C.2 Pb-coated glass*
  - Pre-recycling - Separation of Pb-coated glass from non-contaminated glass
  - Post-recycling - Disposal of Pb-glass (and not the uncontaminated glass) in the TSDF
- ❖ *MFM Credit 3C.3 Mercury containing back-lights*
  - Pre-recycling - Separation of mercury-containing back-lights
  - Post-recycling - Treatment of mercury-containing fractions as per the corresponding post-recycling criteria in the category Discharge light sources
- ❖ *MFM Credit 3C.4 BFR containing plastics*
  - Pre-recycling - Separate and safely store BFR-containing plastic fractions
  - Post-recycling - Sale of BFR-plastic to a customer in need for BFR-containing resins, or disposal of BFR-plastic in the TSDF / cement kilns
- ❖ *MFM Credit 3C.5 Ferrous metals*
  - Pre-treatment efficiency to achieve Ferrous Metals: (product analysis with foreign fraction of plastic < 5%, of electronic circuit boards < 1% in weight)
- ❖ *MFM Credit 3C.6 Non-ferrous metals*

- Pre-treatment efficiency to achieve Non-Ferrous metals: foreign fraction of plastic < 5%, of electronic boards < 1% in weight
  
- ❖ *MFM Credit 3C.7 Electronic circuit boards*
  - Pre-treatment efficiency to achieve Electronic circuit boards dry, without large structure or posterior panels. no refrigeration elements / no transformers / no lithium batteries, no electronic components >5 cm.
  
- ❖ *MFM Credit 3C.8 Non-recoverable materials*
  - Pre-treatment efficiency to achieve non-recoverable material: foreign fraction of plastic < 10%, metals < 5%, electronic boards < 0.5%
  
- ❖ *MFM Credit 3C.9 Plastics*
  - Pre-treatment efficiency to achieve Plastics: plastic fraction amount > 75 in weight, with foreign fraction of Max 5% of rubber - Max 5% of glass - Max 5% of wood - Max 1% foam - Max 15% of metals (including cables and electronic circuit boards)

### **Documentation Required**

Sample measurements, description, photos (As applicable)

## Recycling efficiency

### **D – IT appliances, telephones, small household appliances, lighting fixtures (without lightbulbs), toys, Hi-Fi systems and all other equipment (not in the other categories)**

#### **MFM Credit 3D**

#### **Intent**

Encourage recycling facilities to monitor the recycling efficiency of IT appliances, telephones, small household appliances, lighting fixtures (without lightbulbs), toys, Hi-Fi systems and all other equipment handled within the facility

#### **Compliance Approach & Methodology**

The credit will be assessed based on the following approach adopted for recycling of the various parts in IT appliances, telephones, small household appliances, lighting fixtures (without lightbulbs), toys, Hi-Fi systems and all other equipment (not in the other categories)

- ❖ *MFM Credit 3D.1 Printed wiring boards*
  - Pre-recycling - Separation of Printed Wiring Boards (PWBs).
    - Any processing of PWBs (cutting / crushing / etc) to occur in controlled conditions, incl. dust capture, ventilation etc. (only for recyclers, dismantlers are not allowed to do so)
  - Post-recycling - Recovery of material from the Printed Wiring Boards (PWBs) in controlled conditions. The minimum recovery rates should be as below:
    - Ag (90%), Au (90%), Cu (90%), Pd (90%), Pb (NA)
    - And at least two elements out of Ni (NA), Sn (NA), Sb (NA)
- ❖ *MFM Credit 3D.2 Li-ion batteries*
  - Pre-recycling - Separation of Li-ion batteries
  - Post-recycling - send Li-ion batteries to an authorized battery recycler with the technology required for Li-ion batteries
- ❖ *MFM Credit 3D.3 Other batteries*
  - Pre-recycling - Separation of other batteries
  - Post-recycling - Send normal batteries to an authorized battery recycler (not TSDF)
- ❖ *MFM Credit 3D.4 Mercury containing lights / other parts*
  - Pre-recycling - Separation of mercury-containing back-lights
  - Post-recycling - Treatment of mercury-containing fractions as per the corresponding post-recycling criteria in the category Discharge light sources
- ❖ *MFM Credit 3D.5 Cartridges*
  - Pre-recycling - Separation of cartridges

- Post-recycling - Safely recycle cartridges, preferably through Original Equipment Manufacturers (OEM) or cartridge remanufacturers
- ❖ *MFM Credit 3D.6 BFR containing plastics*
  - Pre-recycling - Separate and safely store BFR-containing plastic fractions
  - Post-recycling - Sale of BFR-plastic to a customer in need for BFR-containing resins, or disposal of BFR-plastic in the TSDF / cement kilns
- ❖ *MFM Credit 3D.7 Compressor/capacitor oils*
  - Pre-recycling - Recover compressor/capacitor oils in leakage-proof containers
  - Post-recycling – Dispose-off the used oil as per the mandate in the hazardous waste authorization
- ❖ *MFM Credit 3D.8 Asbestos / asbestos-containing parts*
  - Pre-recycling - Separation and safe packing and labelling of asbestos / asbestos-containing parts
  - Post-recycling - Send asbestos-containing bags to the TSDF
- ❖ *MFM Credit 3D.9 Ferrous metals*
  - Pre-treatment efficiency to achieve Ferrous Metals: (product analysis with foreign fraction of plastic < 5%, of electronic circuit boards < 1% in weight)
- ❖ *MFM Credit 3D.10 Non-ferrous metals*
  - Pre-treatment efficiency to achieve Non-Ferrous metals: foreign fraction of plastic < 5%, of electronic boards < 1% in weight
- ❖ *MFM Credit 3D.11 Electronic circuit boards*
  - Pre-treatment efficiency to achieve Electronic circuit boards dry, without large structure or posterior panels. no refrigeration elements / no transformers / no lithium batteries, no electronic components >5 cm.
- ❖ *MFM Credit 3D.12 Non-recoverable materials*
  - Pre-treatment efficiency to achieve non-recoverable material: foreign fraction of plastic < 10%, metals < 5%, electronic boards < 0.5%
- ❖ *MFM Credit 3D.13 Plastics*
  - Pre-treatment efficiency to achieve Plastics: plastic fraction amount > 75 in weight, with foreign fraction of Max 5% of rubber - Max 5% of glass - Max 5% of wood - Max 1% foam - Max 15% of metals (including cables and electronic circuit boards)

## Documentation Required

Sample measurements, description, photos (As applicable)

## Recycling efficiency

### E – Discharge light sources: fluorescent lights and compact light sources

#### MFM Credit 3E

#### Intent

Encourage recycling facilities to monitor the recycling efficiency of Discharge light sources: fluorescent lights and compact light sources handled within the facility

#### Compliance Approach & Methodology

The credit will be assessed based on the following approach adopted for recycling of the various parts in Discharge light sources: fluorescent lights and compact light sources

- ❖ *MFM Credit 3E.1 CFL and mercury-containing lights*
  - Pre-recycling - CFL and mercury-containing lights processing (only for recyclers, dismantlers are not allowed to do so) breaking / crushing process conducted under vacuum for capture of dust and mercury vapor
- ❖ *MFM Credit 3E.2 Hg-containing phosphate powder*
  - Pre-recycling - Separation & recovery of Hg-containing phosphate powder
  - Post-recycling -
    - Send phosphate powder to an authorized mercury recovery facility. Or if the technology is available, recovery of mercury on-site, storage in leakage-proof containers, and dispatch to relevant industry
    - In absence of mercury recovery from the phosphate powder, send the Hg-bearing powder and other Hg-containing waste to a TSDF
- ❖ *MFM Credit 3E.3 Hg emissions monitoring*
  - Monitoring of Hg emissions in ambient air and monitoring of shop floor emissions
- ❖ *MFM Credit 3E.4 Air pollution control*
  - Air cleaning through appropriate air pollution control system such as HEPA (High Efficiency Particulate Arrestor) filter system or activated carbon filter system or any other equivalent system; dust / residue collection in appropriate labelled containers and then disposal at a TSDF

#### Documentation Required

Sample measurements, description, photos (As applicable)

# **SUPPLY CHAIN MANAGEMENT**

## Vendors, Partners and Service Providers

### Authorization of downstream vendors, partners and service providers

#### SCM Credit 1.1

##### Intent

Encourage availability of basic important registrations and authorizations of downstream vendors, partners and service providers

##### Compliance Approach & Methodology

The credit will be assessed based on the following approach -

While engaging with vendors, partners and service providers, ensure

- ❖ Formal business registration of vendors and service providers
- ❖ Relevant authorizations by respective SPCBs under applicable rules for all vendors, partners and service providers (i.e. refurbishers, other collectors, dismantlers, recyclers, etc.) who are responsible for certain products/fractions not managed on-site

Credit	Description	Points
SCM Credit 1.1	Authorization of downstream vendors, partners and service providers	5

##### Documentation Required

Copy of the -

List of downstream partners' products/fractions sent

Description of the processes conducted by the downstream vendor and output material

Contact details of downstream partners

Registration document

Authorization document

## Vendors, Partners and Service Providers

### Selection of downstream vendors, partners and service providers

#### SCM Credit 1.2

#### Intent

Ensure careful selection of downstream vendors, partners and service providers to encourage responsible processing throughout the supply chain

#### Compliance Approach & Methodology

The credit will be assessed based on the following approach -

Selection of downstream vendors, partners and service providers should have the following -

- ❖ Clear material balance to indicate that material is not sent to informal sector from that facility
- ❖ Compliances on environmental, social and occupational health parameters

Credit	Description	Points
SCM Credit 1.2	Selection of downstream vendors, partners and service providers	10

#### Documentation Required

Copy of the -

Vendor selection criteria

Written description of steps undertaken to ensure that the material is not sold to informal players, such as collection of bills from downstream vendors etc.

## Vendors, Partners and Service Providers

### Depth of the supply chain check

#### SCM Credit 1.3

#### Intent

Extending control over the different tiers of the supply chain

#### Compliance Approach & Methodology

The credit will be assessed based on the following approach -

The downstream chain check has to be done for

- ❖ downstream vendors to the 1<sup>st</sup> level, i.e. the own vendors of the recycling facilities
- ❖ downstream vendors to the 2<sup>nd</sup> level, i.e. vendors of the 1<sup>st</sup> level of vendors

Credit	Description	Points
SCM Credit 1.3	Depth of the supply chain check	10

#### Documentation Required

Copy of the -

List of downstream vendors 1 level

List of downstream vendors 2 level

Description on systems followed in verifying the depth of downstream supply chain

## Vendors, Partners and Service Providers

### Selection of downstream customers

#### SCM Credit 1.4

#### Intent

Ensure careful selection of customers so that the recycler's output products or fractions do not enter the informal recycling chain through the customers

#### Compliance Approach & Methodology

The credit will be assessed based on the following approach -

The following requirements are necessary while engaging downstream customers

- ❖ Formal business registration of customers
- ❖ Relevant authorizations by respective SPCB under applicable rules
- ❖ Clear evidences that material is not sent to informal sector from the customer end

*Note:* Downstream customers are those customers that buy output products / fractions directly from the recycler

Credit	Description	Points
SCM Credit 1.4	Selection of downstream customers	5

#### Documentation Required

Copy of the -

List of downstream customers

List of products / fractions sent

Description of the processes conducted by the downstream customer

Contact details of downstream customers

Registration document

Authorization document

Written description of steps undertaken to ensure that the material is not sold to informal players, such as collection of bills from downstream vendors etc.

## Vendors, Partners and Service Providers

### Membership / agreement with a TSDF for any hazardous material disposal

#### SCM Credit 1.5

#### Intent

Ensure careful disposal of non-recyclable and / or hazardous material through Treatment, Storage and disposal facility (TSDF)

#### Compliance Approach & Methodology

The credit will be assessed based on the following approach -

- ❖ Recyclers disposing hazardous material through TSDF should have a clear membership or agreement with the closest TSDF available

Credit	Description	Points
SCM Credit 1.5	Membership / agreement with a TSDF for any hazardous material disposal	5

#### Documentation Required

Copy of the -

Membership certificate / agreement copy

Latest bills/receipts of transactions

**Transportation****Fleet ownership and control****SCM Credit 2.1****Intent**

Ensure safe and responsible transportation of e-waste material through exercising ownership and control over fleet

**Compliance Approach & Methodology**

The credit will be assessed based on the following approach -

- ❖ All necessary regulatory authorization should be available for
  - all the transporters
  - recycler's own fleet, if any

<b>Credit</b>	<b>Description</b>	<b>Points</b>
SCM Credit 2.1	Fleet ownership and control	5

**Documentation Required**

Copy of the -

List of all transporters and own vehicles

List of relevant authorizations

**Transportation****Hazardous goods transport process****SCM Credit 2.2****Intent**

Ensure safe and responsible transportation of hazardous goods transportation

**Compliance Approach & Methodology**

The credit will be assessed based on the following approach -

- ❖ Availability of -
  - Clear list of all hazardous goods transported
  - Transport manifest as per the e-waste management rules
  - Material Safety Data Sheets (MSDS) wherever applicable

<b>Credit</b>	<b>Description</b>	<b>Points</b>
SCM Credit 2.2	Hazardous goods transport process	5

**Documentation Required**

List of all supporting documents

## Transportation

### Third party insurance against transport risks

#### SCM Credit 2.3

#### Intent

Ensure safe and responsible transportation of e-waste material by providing a third-party insurance against transportation risks

#### Compliance Approach & Methodology

The credit will be assessed based on the following approach -

- ❖ Third party insurance should be made available for any accident, also involving hazardous material during transport

Credit	Description	Points
SCM Credit 2.3	Third party insurance against transport risks	5

#### Documentation Required

Copy of insurance policy

**Transportation****Records****SCM Credit 2.4****Intent**

Ensure safe and responsible transportation of e-waste material through maintenance of records

**Compliance Approach & Methodology**

The credit will be assessed based on the following approach -

- ❖ Provision of documents for the previous three years on -
  - Vehicle maintenance and Pollution Under Control
  - Driver safety record

<b>Credit</b>	<b>Description</b>	<b>Points</b>
SCM Credit 2.4	Records	10

**Documentation Required**

Sample record

## Transportation

### Minimum damage during loading and unloading

#### SCM Credit 2.5

#### Intent

Ensure safe and responsible transportation of e-waste material through allowing for minimum damage during loading and unloading of material

#### Compliance Approach & Methodology

The credit will be assessed based on the following approach -

- ❖ Minimum damage should be ensured during material loading and unloading at the recyclers' facility

Credit	Description	Points
SCM Credit 2.5	Minimum damage during loading and unloading	5

#### Documentation Required

Description and photos

## Transportation

### Transport vehicle locking system

#### SCM Credit 2.6

#### Intent

Ensure safe and responsible transportation of e-waste material through provision for vehicle locking system

#### Compliance Approach & Methodology

The credit will be assessed based on the following approach -

- ❖ A good transport vehicle locking system should be available to avoid any pilferage between collection location and destination. Provide -
  - Inventory check upon receipt of goods
  - Inventory check upon delivery of goods

Credit	Description	Points
SCM Credit 2.6	Transport vehicle locking system	5

#### Documentation Required

Description and photos

## Transportation

### GPS tracking of the transporter

#### SCM Credit 2.7

#### Intent

Ensure safe and responsible transportation of e-waste material through the provision of GPS tracking facilities in the transport vehicles

#### Compliance Approach & Methodology

The credit will be assessed based on the following approach -

- ❖ Use of systems such as GPS tracking along with the transporters to validate material movement in the supply chain

Credit	Description	Points
SCM Credit 2.7	GPS tracking of the transporter	5

#### Documentation Required

Sample tracking report

**Transportation****Tracking ID for consignment****SCM Credit 2.8****Intent**

Ensure safe and responsible transportation of e-waste material through the provision of tracking ID for consignment

**Compliance Approach & Methodology**

The credit will be assessed based on the following approach -

- ❖ Tracking ID for consignment should be made available

<b>Credit</b>	<b>Description</b>	<b>Points</b>
SCM Credit 2.8	Tracking ID for consignment	5

**Documentation Required**

Description and photos

## Innovation & Exemplary Performance

### Innovative projects

#### SCM Credit 3.1

#### Intent

Award the recycling facility for working on innovative projects in any of the four areas

#### Compliance Approach & Methodology

The credit will be assessed based on the following approach -

- ❖ The facility is eligible for innovation credits if its operational practices are innovative. Innovation under this credit requirement is -
  - First time developed & used in the e-waste recycling industry
  - Innovative international technology modified to meet Indian requirements and cost competitiveness
  - Replicability of the technology in the recycling industry

Credit	Description	Points
SCM Credit 3.1	Innovative Projects	<b>10</b>
	General Aspects	2
	Environmental Aspects	2
	Material Flow Management	2
	Supply Chain Management	2
	Other Aspects	2

#### Documentation Required

Details of the project

Description and photos

## Innovation & Exemplary Performance

### Exemplary performance

#### SCM Credit 3.2

#### Intent

Award the recycling facility for exhibiting exemplary performance above the requirements of the GreenCo Rating System in any of the four areas

#### Compliance Approach & Methodology

The credit will be assessed based on the following approach -

- ❖ The facility is eligible for exemplary performance credits if its operational practices greatly exceed the credit requirements of the GreenCo Rating System for Recyclers

Credit	Description	Points
SCM Credit 3.2	Exemplary Performance	<b>10</b>
	General Aspects	2
	Environmental Aspects	2
	Material Flow Management	2
	Supply Chain Management	2
	Other Aspects	2

#### Documentation Required

Details of the project

Description and photos

# ENVIRONMENTAL MANAGEMENT

## **Environmental management policy**

### **EM Mandatory Requirement 1**

#### **Intent**

To demonstrate the commitment of the company towards improving its environmental performance. A policy provides framework and direction for environmental efficiency improvement activities in the company

#### **Compliance Approach & Methodology**

A policy with clearly defined objectives and commitment to systematically enhance environmental performance and improve efficiency

#### **Documentation Required**

Copy of the policy signed by the head of the facility

## **Awareness creation and employee involvement in the areas of energy conservation, water conservation and waste management**

### **EM Credit 1**

#### **Intent**

Encourage recycling facilities to create awareness about the environmental aspects among all employees and involve employees while taking up efficiency improvement projects on a continuous basis

#### **Compliance Approach & Methodology**

The credit will be assessed based on the -

Programs and initiatives taken for employee involvement like poster displays, competition, slogans, environmental day celebrations, etc. These programs should be aimed at involving all the employees

<b>Credit</b>	<b>Description</b>	<b>Points</b>
EM Credit 1	Awareness creation and employee involvement in the areas of energy conservation, water conservation and waste management	10

#### **Documentation Required**

A write up explaining the different awareness programs conducted during the year and strategies adopted for employee involvement highlighting - date of program, agenda of the program, participants, contents of the presentations, photographs, results, feedback, etc.

## Energy Efficiency

### Metering and monitoring systems

#### EM Credit 2.1

#### Intent

Encourage implementation of a comprehensive energy monitoring & management system for monitoring energy consumption across the plant on a continuous basis, carryout variance analysis and take corrective actions on a daily basis to minimize energy consumption

#### Compliance Approach & Methodology

The credit will be assessed based on the -

- ❖ Installation of energy monitoring system and monitoring of energy consumption at the supply and user ends
- ❖ **Daily variance analysis and correction** - Analyze the daily report and take corrective actions immediately if there is an increase in energy consumption. Document reasons for increase in energy consumption, analysis carried out and the corrective measures taken
- ❖ **Monthly reviews** - Management to conduct monthly reviews pertaining to energy efficiency activities

Credit	Description	Points
EM Credit 2.1	Metering and monitoring systems	10

#### Documentation Required

Schematic diagram of the energy monitoring system

Details of the percentage of energy consumers covered as part of the energy monitoring system

Sample monitoring reports generated on a daily basis

Sample documentation of daily variance analysis and corrective action taken

Sample minutes of the monthly review meetings

## Energy Efficiency

### Reduction in specific energy consumption through implementation of efficiency improvement projects

#### EM Credit 2.2

#### Intent

To achieve consistent reduction in specific energy consumption and have clear targets for further reduction through implementation of efficiency improvement projects

#### Compliance Approach & Methodology

The credit will be assessed based on the -

- ❖ Monitoring of specific energy consumption on a daily basis
- ❖ Documentation of the specific energy consumption variations on a daily, monthly and yearly basis
- ❖ Establishment of percentage reduction in specific energy consumption after implementing energy conservation measures year wise
- ❖ Percentage reduction in SEC in the past 3 years or % energy savings achieved with respect to total energy consumption through implementation of energy saving projects

Credit	Description	Points
EM Credit 2.2	Reduction in specific energy consumption through implementation of efficiency improvement projects	5

#### Documentation Required

Documents indicating the SEC of the company for the last 3 years

Details of the projects implemented to reduce specific energy consumption

## Energy Efficiency

### Substitution with Renewable Energy

#### EM Credit 2.3

#### Intent

To bring in a commitment to maximize the share of renewable energy generation and utilization thereby reducing dependence on fossil fuels

#### Compliance Approach & Methodology

The credit will be assessed based on the -

- ❖ Specific short-term and long-term targets for increasing the share of renewable energy generation or utilization in the facility
- ❖ Clear short-term & long-term action plans to achieve the set targets
- ❖ Approved budget allocation from the top management to carry out the activities
- ❖ Monitoring mechanism
- ❖ % of overall energy consumption substituted with renewable energy

Credit	Description	Points
EM Credit 2.3	Substitution with Renewable Energy	10

#### Documentation Required

Documents highlighting -

Targets and action plan

Approved budget allocation

Review mechanism to monitor the progress of implementation

Renewable energy systems installed

Annual generation of renewable energy (electrical & thermal) in equivalent kWh

## Water Conservation

### Water metering and monitoring

#### EM Credit 3.1

#### Intent

To implement systems to measure and monitor the overall fresh water consumption and specific water use in the facilities

#### Compliance Approach & Methodology

The credit will be assessed based on the -

- ❖ System for water metering at critical locations accounting for more than 80% of fresh water consumption and wastewater discharge
  - Intake from sources – all sources to be covered
  - Fresh water users – all individual users of consumption accounting for more than 10% of the total water consumption
  - Monitoring of wastewater generated, recycled or reused, & discharged as effluent
- ❖ Monitoring, variance analysis and reviews of water consumption on a monthly basis

Credit	Description	Points
EM Credit 3.1	Water metering and monitoring	10

#### Documentation Required

Detailed water balance of the plant

Detailed description of the monitoring system implemented for accounting water consumption

## Water Conservation

### Reduction in Specific Water Consumption through implementation of water conservation projects

#### EM Credit 3.2

#### Intent

To reduce the demand for fresh water consumption by maximizing water use efficiency and minimizing the specific wastewater generated in the facility

#### Compliance Approach & Methodology

The facility should have employed strategies and concepts for achieving reduction in specific fresh water consumption. The credit will be assessed based on the -

- ❖ Monitoring of specific water consumption on a daily basis
- ❖ Documentation of the specific energy consumption variations on a daily, monthly and yearly basis
- ❖ Establishment of percentage reduction in specific water consumption after implementing water conservation measures year wise
- ❖ Percentage reduction in SWC in the past 3 years or % water savings achieved with respect to total water consumption through implementation of water saving projects

Credit	Description	Points
EM Credit 3.2	Reduction in Specific Water Consumption through implementation of water conservation projects	5

#### Documentation Required

Documents indicating the SWC of the company for the last 3 years

Details of the projects implemented to reduce specific water consumption

**Water Conservation****Rain Water Harvesting****EM Credit 3.3****Intent**

To substitute fresh water usage or increase the groundwater table through effective and appropriate rainwater harvesting structures

**Compliance Approach & Methodology**

The credit will be assessed based on the following -

- ❖ Facility should have implemented rainwater harvesting system to capture run-off water from roof and non-roof (paved and unpaved) areas
- ❖ The captured rainwater should be utilized in the facility to preferably substitute freshwater or recharge groundwater
- ❖ Points will be awarded based on the percentage of rain water harvesting potential captured

<b>Credit</b>	<b>Description</b>	<b>Points</b>
EM Credit 3.3	Rain Water Harvesting	10

**Documentation Required**

Provide details of the rainwater harvesting system installed – area, rainfall, storage or recharge structures, potential captured, freshwater substituted, etc.

Details of the quantity of rainwater harvested in last 3 years

## Waste Management

### Waste Inventorization and Monitoring

#### EM Credit 4.1

#### Intent

To encourage continuous monitoring and accounting of different types of wastes generated to understand, quantify and manage the waste stream

#### Compliance Approach & Methodology

The credit will be assessed based on the following approach -

- ❖ All types of hazardous and non-hazardous wastes should be quantified at each stage of waste management -
  - generated
  - recycled / reused
  - recovered
  - treated
  - landfill / disposed off
- ❖ Along with quantity, the inventorization should also include the source of each waste generated

Credit	Description	Points
EM Credit 4.1	Waste Inventorization and Monitoring	5

#### Documentation Required

Documents showing the waste inventory for last 3 years

Details of the objectives set and waste reduction programs developed

## Waste Management

### Collection, segregation, storage & disposal mechanism

#### EM Credit 4.2

#### Intent

To ensure an effective waste management system

#### Compliance Approach & Methodology

The credit will be assessed based on the following approach -

- ❖ Collection, segregation, storage and disposal mechanism should be available for different types of wastes (bio degradable, non-bio-degradable, hazardous and non-hazardous) & e-waste
  - System to handle the internal transport of waste from the place of generation to the place of storage
  - Different types of wastes should be stored separately in a secured place until further processing / handling / treatment / disposal has taken place
- ❖ All employees of the unit / facility should have the basic understanding of waste management system

Credit	Description	Points
EM Credit 4.2	Collection, segregation, storage & disposal mechanism	10

#### Documentation Required

Plant layout indicating the location of waste collection bins, scrap yard, etc.

Photographs of present waste management system

A brief writeup on the different training programs conducted for employees to educate them on waste collection, segregation and disposal mechanisms. Relevant supporting documents should be attached

**Waste Management****Solid waste management****EM Credit 4.3****Intent**

To reduce the amount of solid waste that are disposed to landfill and minimize negative environmental impacts

**Compliance Approach & Methodology**

The credit will be assessed based on the following approach -

- ❖
- ❖ List of hazardous and non-hazardous waste management
- ❖ Reduction of specific waste disposal through improvement in waste management over a period of 3 years

<b>Credit</b>	<b>Description</b>	<b>Points</b>
EM Credit 4.3	Solid waste management	10

**Documentation Required**

A brief writeup explaining the percentage reduction in solid waste achieved in the last 3 years

Inventory showing the reduction in waste (hazardous and non-hazardous)

Detailed description of the projects implemented to achieve the reduction in solid waste (hazardous and non-hazardous)

## Waste Management

### Liquid waste management

#### EM Credit 4.4

#### Intent

To prevent / reduce the amount of liquid pollutants discharged to the storm drain system or to water bodies and minimize negative environmental impacts

#### Compliance Approach & Methodology

The credit will be assessed based on the following approach

- ❖ The unit should meet the conditions prescribed by SPCB or local authority with respect to process effluent and sewage discharge
- ❖ The unit will get points based on the % reduction in process effluent discharge and sewage discharge in the last 3 years
- ❖ If zero discharge of process effluent or sewage is a mandatory requirement then it should be complied
- ❖ If the unit has already implemented zero effluent discharge / zero sewage discharge systems, maximum points will be given

Credit	Description	Points
EM Credit 4.4	Liquid waste management	5

#### Documentation Required

A brief writeup explaining the amount of liquid waste generated. The write up should explain in detail the initiatives taken to reduce the amount of liquid waste (process effluent and sewage) generated / status of Zero Liquid Discharge.

## Waste Management

### Gaseous waste management

#### EM Credit 4.5

#### Intent

To prevent discharge of SPM, TPM, SO<sub>x</sub>, NO<sub>x</sub>, VOCs and other gaseous pollutants to environment and minimize negative impacts

#### Compliance Approach & Methodology

The credit will be assessed based on the following approach

- ❖ Prevent release of VOCs, SPM, TPM, SO<sub>x</sub>, NO<sub>x</sub> and other gaseous pollutants to environment and maintain ambient air quality within the plant with respect to the upcoming statutory requirements
- ❖ Reduction in ambient air quality pollutants
- ❖ Reduction in gaseous pollutants emission with respect to latest norms released by legal authorities

Credit	Description	Points
EM Credit 4.5	Gaseous waste management	
EM Credit 4.5.1	Ambient air quality pollutants	5
EM Credit 4.5.2	Other gaseous pollutants	5

#### Documentation Required

Document supporting the shop floor and ambient air emissions levels

Consent copy of "Air Pollution (Prevention and Control of Pollution) Act" issued from SPCB

Documents detailing any other compliance options issued by the local authority, customer or corporate specific to air emissions control

A brief writeup explaining the details of activities done to achieve the norms

# **CII GREENCO RATING FOR E-WASTE RECYCLERS – PILOT VERSION CHECKLIST**

General Aspects						
Credit	Credit Description	Credit Points	Sub Credits	Sub Points	Credit Requirement	Documentation
GA Mandatory Requirement 1	Certificate of registration	Mandatory requirement - No points			Certificate of registration and proof of installed capacity of plant and machinery issued by the District Industries Centre or any other government agency authorised in this regard	1. Copy of the registration certificate
GA Mandatory Requirement 2	Consent to establish and operate				Availability of the consent to establish and operate (under the red category) clearly mentioning the general aspects, waste water aspects, air emission aspects and hazardous waste aspects and also supported with NOCs/periodic renewals as applicable	1. Consent to establish and operate from the respective SPCB 2. NOC if the unit wasn't established within a year of receipt of the consent 3. Periodic renewals of the consent as applicable to the unit
GA Mandatory Requirement 3	Authorization certificate under e-waste rules				Authorization for the collection / storage / dismantling / recycling of e-waste and its renewals as applicable	1. Copy of the Form 1 submitted and authorization certificate 2. Copy of the renewal certificates
GA Mandatory Requirement 4	Authorization certificate under hazardous waste rules				Authorization for the collection / storage and disposal of hazardous waste and its renewals as applicable	1. Authorization letter in case it is not a part of the Consent to operate
GA Mandatory Requirement 5	Records of e-waste handled and disposed				Records of e-waste handled and disposed and make such records available for scrutiny when asked for	1. Copy of the Form 2 submitted 2. Copy of the records on quantities handled
GA Mandatory Requirement 6	Filed annual returns				Filed annual returns by the refurbisher or collection centres or dismantler or recycler	1. Copy of Form 3 submitted - Filed annual returns
GA Mandatory Requirement 7	E-waste manifest				Copy of the transport manifest system as per e-waste guidelines (three copies) with the transporter	1. Copy of Form 6 - E-waste manifest

GA Mandatory Requirement 8	Awareness creation for employees in the areas covered under general aspects				Encourage recycling facilities to create awareness about the general aspects such as labour, health, safety and others among all employees and keep them informed about their rights	<ol style="list-style-type: none"> <li>1. A write up explaining the different awareness programs conducted during the year</li> <li>2. Copy of Occupational Health and Safety Policy</li> </ol>
<b>GA Credit 1</b>	<b>Facility Operation</b>	<b>60</b>				
GA Credit 1.1	Collection		<b>10</b>		<p>Clearly defined collection models for the e-waste</p> <ol style="list-style-type: none"> <li>i. Individual collection model wherein the recyclers receive the e-waste directly from the producers</li> <li>ii. Collective model wherein the recyclers get the e-waste through collection centres and other supply chain arrangements</li> <li>iii. Incase of own collection centres, define the working model of the collection centre</li> <li>iv. Contribution to the take-back models of the producers that the recyclers work with</li> </ol>	<ol style="list-style-type: none"> <li>1. Description of the e-waste collection model</li> <li>2. Description of systems in case contribution is made to producers with their take-back models</li> </ol>
GA Credit 1.2	Storage		<b>40</b>			
GA Credit 1.2.1	Onsite/offsite storage			10	<p>Availability of marked storage spaces for the collected e-waste either within the facility premises or beyond the facility in terms of warehouses</p> <ul style="list-style-type: none"> <li>- The storage of waste at anytime should not exceed the annual capacity to treat</li> <li>- The storage period of e-waste shall not exceed 180 days</li> <li>- Record of collection and storage details shall be maintained and made available for inspection</li> </ul>	<ol style="list-style-type: none"> <li>1. Records that track the storage material movement in and out of the storage area or warehouse</li> </ol>

					- Storage space for dismantlers (minimum 300 square meter area for a dismantling capacity of 1T/day) and recyclers (minimum 500 square meter area for a recycling capacity of 1T/day) should be made available as per CPCB guidelines	
GA Credit 1.2.2	Segregated storage of e-waste			5	Appropriate containers should be used for storing different e-waste items separately to ensure that mixing of different kinds of e-waste does not occur	1. Description of segregation models, in terms of documents and visible demonstration
GA Credit 1.2.3	Weatherproof covering			10	Weatherproof covering for storage and treatment areas to - minimize the contamination of clean surface - avoid contamination of rain water - facilitate the reuse of the complete material intended for recycling Weatherproof covering can be in terms of lighter protective material or a constructed roofed building - Storage occurs by product category - separate storage for batteries, capacitors with PCBs/PCTs, etc.	1. Documents supporting provision of weatherproof covering
GA Credit 1.2.4	Impermeable surfaces, leakage prevention and spillage collection facilities			10	Impermeable surfaces should be provided wherever required to prevent movement of liquids beyond the pavement surface. The impermeable surfaces should be connected to proper drainage systems Leakage prevention initiatives should be in place.	1. Documents supporting provision of impermeable surfaces and drainage systems 2. Documents to support initiatives taken for leakage prevention 3. Documents to support provision of appropriate spillage collection facilities

					Spillage collection facilities to handle oil, fuel and acids spills should be provided appropriately	
GA Credit 1.2.5	Protection against unauthorized access			5	1.Unauthorized persons should not access, add or remove possible equipment or parts without being monitored 2. Access control should be provided to areas wherein equipment is stored, dismantled and recycled	1. Systems in place that prevents access to unauthorized personnel
GA Credit 1.3	Dismantling and Segregation			10	Provision of a designated space for dismantling and segregation - Manual dismantling should only involve the of used electronic and electrical equipments where there is no likelihood for being in contact with hazardous substances - An integrated facility should provide a mechanical dismantling facility to dismantle e-waste containing hazardous substances	1. Description of dismantling and segregation areas in case of manual dismantling 2. Systems that work to provide a mechanical dismantling facility
<b>GA Credit 2</b>	<b>Occupational Ethics</b>	<b>15</b>				
GA Credit 2.1	Prohibition of employment of child labour			5	No child who has not completed his fourteenth year shall be required or allowed to work - A child after 14 years should provide a certificate of fitness and should be under the supervision of the facility incharge. Renewal of fitness certificate needs to be carried out once a year - Children below 18 are not allowed to work in hazardous operations - Adolescents between 14 and 18	1. Child worker register and details 2. Log in and log out registers 3. Supporting documents on training provided 4. Details of supervisors assigned to young employees

					years of age cannot be employed before 6AM and after 7PM and not for more than 4.5 hours a day - Every child worker in the facility should be registered for name, details, shifts and nature of work	
GA Credit 2.2	Equal Remuneration		5		Equal remuneration has to be paid to men and women workers for the same work or work of similar nature without any discrimination	1. Pay slips of employees
GA Credit 2.3	Minimum Wages		5		The facility should provide the minimum rates of wages payable to employees as instructed by the appropriate Governments (State or Centre), whichever is applicable	1. Pay slips of employees
<b>GA Credit 3</b>	<b>Occupational Health</b>	<b>55</b>				
GA Credit 3.1	Cleanliness		5		Facilities should be kept clean by: - Avoiding accumulation of dirt and refuse from floors, workrooms, staircases, passages, walls and partitions, ceilings, etc. through sweeping and washing - Maintaining neat painted walls, doors and window-frames	1. Cleaning schedule 2. Painting frequency and schedule
GA Credit 3.2	Drinking water		5		Clean and sufficient drinking water should be provided to employees, at - - Multiple points - Marked and labelled as drinking water in local language - Placed atleast 6m away from washrooms, drains, etc.	1. Drinking water standards
GA Credit 3.3	Dust and fumes		5		Effective measures should be taken to prevent inhalation and accumulation of dust, fumes and	1. Description of exhaust systems provided for dust and fumes

					other impurities through effective exhaust systems	
GA Credit 3.4	Lighting		<b>10</b>		<p>Every area of the facility that encounters people movement</p> <ul style="list-style-type: none"> <li>- should be provided with sufficient and suitable lighting, natural or artificial, or both</li> <li>- should be prevented from glare and formation of shadows</li> <li>- should be ensured to avoid eye strains or any accidents to employees</li> <li>- should adhere to State Government's standards on sufficient and suitable lighting for factories or for any class of description of factories or for any manufacturing process, if any</li> </ul>	1. Documents to provide lighting levels in the work area
GA Credit 3.5	Overcrowding		<b>5</b>		<p>Rooms in the facility should not be overcrowded to an extent injurious to the health of the workers employed. A minimum of 14.2m<sup>3</sup> of space for every worker should be provided and height more than 4.2m above floor level</p>	1. Documents highlighting the space available per employee
GA Credit 3.6	Toilets		<b>5</b>		<p>Sufficient toilet facilities should be provided -</p> <ul style="list-style-type: none"> <li>- With separate enclosures for male and female employees</li> <li>- With adequate lighting and ventilation</li> <li>- And maintained in clean and sanitary condition at all times</li> <li>- With workers whose primary duty</li> </ul>	

					will be to clean and ensure cleanliness in toilets	
GA Credit 3.7	Ventilation and temperature		<b>10</b>		<p>Facilities should provide -</p> <ul style="list-style-type: none"> <li>- adequate ventilation through circulation of fresh air</li> </ul> <p>In case of artificial ventilation, the number of air changes shall be given</p> <p>In case of natural ventilation, the open window area with respect to the total area of the walls shall be given</p> <ul style="list-style-type: none"> <li>- optimum temperature to provide reasonable conditions of comfort and prevent injury to health</li> <li>- Systems to carry out regular monitoring should be implemented to ensure adequate ventilation and temperature conditions</li> </ul>	<ol style="list-style-type: none"> <li>1. Documents to indicate fresh air circulation rate, temperature</li> <li>2. Description of monitoring systems</li> </ol>
GA Credit 3.8	Working hours & rest hours		<b>5</b>		<p>Workers should</p> <ul style="list-style-type: none"> <li>- not work in the facility for more than forty-eight hours in any week</li> <li>- not work in the facility for more than nine hours in any day, excluding overtime (in respect of overtime work, employees are entitled to wages at the rate of twice the ordinary rate of wages)</li> <li>- not work for more than five hours before having a break of at least half an hour</li> <li>- be provided with 24 hours rest after carrying out night shifts</li> <li>- be provided with weekly holidays &amp; National holidays</li> </ul>	<ol style="list-style-type: none"> <li>1. Log in and log out registers</li> </ol>

					- be provided with compensatory holidays	
GA Credit 3.9	Ergonomics and Working Conditions		5		Demonstrate - that the working conditions provided are ergonomically designed - Types of seating arrangement provided for workers - Measures taken to eliminate standing working conditions for workers	1. Description 2. Sample photographs
<b>GA Credit 4</b>	<b>Occupational Safety</b>	<b>40</b>				
GA Credit 4.1	Accident reporting		5		All accidents - missed, minor and major needs to be recorded, reported and extra caution has to be taken care of to avoid accidents	1. Register of accident reports
GA Credit 4.2	Hoists and lifts, excessive weights		5		Employees should not be engaged to lift, carry or move any load so heavy as to be likely to cause an injury Hoists and lifts should be - of adequate strength - maintained regularly supported with reports / test certificates for hoists and lifts, excessive weights - sufficiently protected by an enclosure fitted with gates with safe opening and closing conditions - indicated with maximum safe working load In case of manual lifting, a person cannot lift more than 20kg weight at a time	

GA Credit 4.3	Precautions in case of fire, alarms, smoke detectors, fire extinguishers, hydrants and mock drills		10	<p>Facility should take all practicable measures to prevent outbreak of fire and its spread, both internally and externally, and to provide and maintain-</p> <ul style="list-style-type: none"> <li>- Fire alarms and smoke detectors should be provided in the facility to detect fires, initiate alarms &amp; activate fire isolation devices and/or fire suppression systems (and, for some systems, activate or shut down equipment)</li> <li>- safe means of escape for all persons in the event of a fire</li> <li>- the necessary equipment and facilities for extinguishing fire</li> <li>- Facilities should also create adequate awareness for workers with the means of escape in case of fire and trained in the routine to be following in such cases</li> <li>- Periodic mock drills to be conducted to develop employee skills and evaluate adequacy of escape plan in case of emergency</li> </ul>	<ol style="list-style-type: none"> <li>1. Purchase documents of fire protection devices</li> <li>2. Emergency response plan in case of fire</li> <li>3. Employees' awareness towards use of fire protection devices</li> <li>4. Description of fire alarms and smoke detectors</li> <li>5. Description and frequency of mock drills carried out</li> </ol>
---------------	--	--	----	---	--

GA Credit 4.4	Use of Personal Protection Equipment (PPE) and first aid		10	<p>All personal protective equipment (PPE) should be provided and strictly used.</p> <ul style="list-style-type: none"> <li>- Effective PPE should be provided for employees working at or near the process wherein there is a risk of injury to the individuals.</li> <li>- Readily accessible first-aid boxes with the prescribed contents. Number of boxes shall not be less than one for every one hundred and fifty workers ordinarily employed at any one time in the factory</li> <li>- Nothing except the prescribed contents shall be kept in a first-aid box or cupboard</li> <li>- Each first-aid box or cupboard shall be kept in the charge of a separate responsible person, who holds a certificate in first-aid treatment recognized by the State Government and who shall always be readily available during the working hours of the factory</li> </ul>	<ol style="list-style-type: none"> <li>1. Provision of PPE for all employees</li> <li>2. Availability and use of first aid kit</li> </ol>
GA Credit 4.5	Safety of buildings and machinery		5	<p>Measures should be employed to ensure complete safety of buildings and moving/non-moving equipment in the facility. Regular servicing of all safety equipment and other equipment (Fire Extinguisher, Fire Hydrant Systems, Fume detection systems) should be carried out</p>	<ol style="list-style-type: none"> <li>1. Description of safety measures taken in the facility</li> <li>2. Documents to support regular services of all safety equipment and other equipment</li> </ol>

GA Credit 4.6	Noise levels		<b>5</b>		The noise levels in the operations area should not exceed the ambient air quality standards in respect of noise	1. Description of noise control measures 2. Test reports of noise levels
<b>GA Credit 5</b>	<b>Risk cover</b>	<b>30</b>				
GA credit 5.1	Accidents		<b>10</b>		Insurance covering clean-up and sanitization in case of accident on-site involving hazardous components	Copy of insurance policy
GA credit 5.2	Natural calamities		<b>10</b>		Insurance covering fire events, flood events, etc.	Copy of insurance policy
GA credit 5.2	Employees		<b>10</b>		Insurance cover for employees	Copy of insurance policy

Material Flow Management						
Credit	Credit Description	Credit Points	Sub Credits	Sub Points	Credit Requirement Description	Documentation
MFM Mandatory Requirement 1	Material accounting system				Presence of a material accounting system including - - input - output System can be any of the following - - basic material flow accounting board - computerized system Accounting to be updated weekly	Description of the material accounting system
MFM Mandatory Requirement 2	Material balance diagram				Material balance diagram to be put in place deriving out of the material accounting system indicating product type, quantity and weight <b>Inputs = Waste + Output</b> Material balance diagram to be updated on a weekly basis	Description / flowchart describing the inventory and weighing process
MFM Mandatory Requirement 3	Standard Operating Procedure (SOP) for every major process activity				Clear SOPs for major process activities should be made available and revisited as and when required	Description of SOPs of major process activities
<b>MFM Credit 1</b>	<b>Material flow monitoring systems</b>	<b>25</b>				
MFM Credit 1.1	Weighing bridge and weighing scales		5		Adequate weighing infrastructure should be available - presence of a weighing bridge, calibrated once every year - presence of adequate weighing scales at all relevant stages, calibrated once every year	Weighing bridge calibration certificate List of weighing scales with photos/receipts

MFM Credit 1.2	Systems		5		Material flow monitoring system can be any of the following - - paper balance sheet - semi-automated computerized system - computerized system	Description of the tool, what it captures, how to balance out the material. Sample report
MFM Credit 1.3	Material flow traceability		5		Material flow traceability from product batch receipt to the end-fractions, ensuring product and fraction traceability	Description of the fractions captured, how the material is balanced by fraction. Description of process to follow the material batch from one particular client. Sample report
MFM Credit 1.4	Material balance frequency		5		Detail the frequency at which the mass flows are balanced	Sample report of the calculations
MFM Credit 1.5	CCTV with backup greater than material balance frequency		5		CCTV backup for at least 2x period of material balance frequency to check for any discrepancies or in case of errors/missing materials	Description of CCTV systems available
<b>MFM Credit 2</b>	<b>Dismantling efficiency</b>	<b>25</b>				
MFM Credit 2.1	Refurbishment status from OEMs or senders		5		Details of refurbishment status of material received from OEMs or senders should be maintained to ensure that the material has been refurbished to its maximum extent	Certificates from OEMs or senders
MFM Credit 2.2	Data destruction mechanism		5		Availability of infrastructure for data destruction for those data-containing products	Description of the data destruction mechanism adopted and photos
MFM Credit 2.3	Equipment for dismantling and recycling		5		Presence of the following basic equipment for dismantling and recycling - - baling machine - shredder for plastics - pallet roll - forklifts	Description of the machinery and photos / receipt

					- applicable equipment with respect to the type of e-waste handled	
MFM Credit 2.4	Material losses in the dismantling process		5		Maintain minimum material losses in the dismantling process, highlighting - - % material loss in every stage of the process	Material balance report highlighting material losses
MFM Credit 2.5	Disposal of products that are not allowed for recycling		5		Identification and disposal of products that are not allowed for recycling - identification methods - list of such products - safe disposal methods	Description of the process in place, who is in charge, training of the relevant staff members etc.
<b>Sections by product categories - Points for this credit will be re-allocated for the various types of e-waste handled by the e-waste recycler</b>						
<b>MFM Credit 3A</b>	<b>Recycling - Cooling and Air conditioning</b>	<b>10</b>				
MFM Credit 3A.1	Cooling agents & ozone depleting substances				<u>Pre-recycling</u> - Drain the cooling agent as well as any other Ozone Depleting Substance containing liquid/gas and store it in a leakage-proof container <u>Post-recycling</u> - Send the cooling agent for reuse, or for elimination in an authorized facility	Description, photos

MFM Credit 3A.2	Polyurethane foam				<p><u>Pre-recycling</u> - Separate and safely store the Polyurethane Foam</p> <p><u>Post-recycling</u> - Crush PU foam in a closed atmosphere environment to extract the Ozone Depleting Gases from the foam, send the PU form for reuse, to a high-temperature incineration facility (e.g. cement plant), or to a TSDF</p>	Description, photos
MFM Credit 3A.3	BFR containing plastics				<p><u>Pre-recycling</u> - Separate and safely store BFR-containing plastic fractions</p> <p><u>Post-recycling</u> - Sale of BFR-plastic to a customer in need for BFR-containing resins, or disposal of BFR-plastic in the TSDF / cement kilns</p>	Description, photos
MFM Credit 3A.4	Compressor oils				<p><u>Pre-recycling</u> - Recover compressor oils in leakage-proof containers</p> <p><u>Post-recycling</u> – Dispose-off the used oil as per the mandate in the hazardous waste authorization</p>	Description, photos
MFM Credit 3A.5	Asbestos / asbestos-containing parts				<p><u>Pre-recycling</u> - Separation and safe packing and labelling of asbestos / asbestos-containing parts</p> <p><u>Post-recycling</u> - Send asbestos-containing bags to the TSDF</p>	Description / flow chart or receipts and copy of authorization of the recovery facility. Receipts from the TSDF
MFM Credit 3A.6	Ferrous metals				Pre-treatment efficiency to achieve - Ferrous Metals: (product analysis with foreign fraction of plastic < 5%, of electronic circuit boards < 1% in weight)	sample measurements, photos
MFM Credit 3A.7	Non-ferrous metals				Pre-treatment efficiency to achieve - Non-Ferrous metals: foreign	sample measurements, photos

					fraction of plastic < 5%, of electronic boards < 1% in weight	
MFM Credit 3A.8	Electronic circuit boards				Pre-treatment efficiency to achieve - Electronic circuit boards dry, without large structure or posterior panels. no refrigeration elements / no transformers / no lithium batteries, no electronic components >5 cm.	sample measurements, photos
MFM Credit 3A.9	Non-recoverable materials				Pre-treatment efficiency to achieve - Non-recoverable material: foreign fraction of plastic < 10%, metals < 5%, electronic boards < 0.5%	sample measurements, photos
MFM Credit 3A.10	Plastics				Pre-treatment efficiency to achieve - Plastics: plastic fraction amount > 75 in weight, with foreign fraction of Max 5% of rubber - Max 5% of glass -Max 5% of wood - Max 1% foam - Max 15% of metals (including cables and electronic circuit boards)	sample measurements, photos
<b>MFM Credit 3B</b>	<b>Other large "white" appliances</b>	<b>10</b>				
MFM Credit 3B.1	Mercury containing parts				<u>Pre-recycling</u> - Separation of mercury-containing lights and other mercury-containing parts <u>Post-recycling</u> - Treatment of mercury-containing fractions as per the corresponding post-recycling criteria in the category Discharge light sources	

MFM Credit 3B.2	Batteries				<p><u>Pre-recycling</u> - Separation of batteries</p> <p><u>Post-recycling</u> - Send batteries to an authorized battery recycler</p>	
MFM Credit 3B.3	BFR containing plastics				<p><u>Pre-recycling</u> - Separate and safely store BFR-containing plastic fractions</p> <p><u>Post-recycling</u> - Sale of BFR-plastic to a customer in need for BFR-containing resins, or disposal of BFR-plastic in the TSDF / cement kilns</p>	Description, photos
MFM Credit 3B.4	Compressor oils				<p><u>Pre-recycling</u> - Recover compressor oils in leakage-proof containers</p> <p><u>Post-recycling</u> – Dispose-off the used oil as per the mandate in the hazardous waste authorization</p>	Description / flow chart or receipts and copy of authorization of the recovery facility. Receipts from the TSDF
MFM Credit 3B.5	Asbestos / asbestos-containing parts				<p><u>Pre-recycling</u> - Separation and safe packing and labelling of asbestos / asbestos-containing parts</p> <p><u>Post-recycling</u> - Send asbestos-containing bags to the TSDF</p>	Description / flow chart or receipts and copy of authorization of the recovery facility. Receipts from the TSDF
MFM Credit 3B.6	Ferrous metals				Pre-treatment efficiency to achieve - Non-Ferrous Metals: (product analysis with foreign fraction of plastic <5%, of electronic circuit boards <1% in weight)	sample measurements, photos
MFM Credit 3B.7	Non-ferrous metals				Pre-treatment efficiency to achieve - Ferrous metals: foreign fraction of plastic <5%, of electronic boards <1% in weight	sample measurements, photos

MFM Credit 3B.8	Electronic circuit boards				Pre-treatment efficiency to achieve - Electronic circuit boards dry, without large structure or posterior panels. no refrigeration elements / no transformers / no lithium batteries, no electronic components >5 cm.	sample measurements, photos
MFM Credit 3B.9	Non-recoverable materials				Pre-treatment efficiency to achieve - Non-recoverable material: foreign fraction of plastic < 10%, metals < 5%, electronic boards < 0.5%	sample measurements, photos
MFM Credit 3B.10	Plastics				Pre-treatment efficiency to achieve - Plastics: plastic fraction amount > 75 in weight, with foreign fraction of Max 5% of rubber - Max 5% of glass -Max 5% of wood - Max 1% foam - Max 15% of metals (including cables and electronic circuit boards)	sample measurements, photos
<b>MFM Credit 3C</b>	<b>TV, monitors, LCD screen, plasma screens, digital photo frames</b>	<b>10</b>				
MFM Credit 3C.1	CRT / LCD / plasma processing				<u>Pre-recycling</u> - Cutting / shredding / separation of funnel and panel glass in controlled environment (sealed vacuum dismantling platform, air suction system followed by cleaning through bag filter etc.) - For CRTs: operations to occur in low vacuum (650 mm of Hg) chambers with dust capture and treatment - For LCD/plasma: sealed vacuum dismantling platform	Description / flow chart

MFM Credit 3C.2	Pb-coated glass				<p><u>Pre-recycling</u> - Separation of Pb-coated glass from non-contaminated glass</p> <p><u>Post-recycling</u> - Disposal of Pb-glass (and not the uncontaminated glass) in the TSDF</p>	Description / flow chart or receipts and copy of authorization of the recovery facility. Receipts from the TSDF
MFM Credit 3C.3	Mercury containing back-lights				<p><u>Pre-recycling</u> - Separation of mercury-containing back-lights</p> <p><u>Post-recycling</u> - Treatment of mercury-containing fractions as per the corresponding post-recycling criteria in the category Discharge light sources</p>	Description / flow chart
MFM Credit 3C.4	BFR containing plastics				<p><u>Pre-recycling</u> - Separate and safely store BFR-containing plastic fractions</p> <p><u>Post-recycling</u> - Sale of BFR-plastic to a customer in need for BFR-containing resins, or disposal of BFR-plastic in the TSDF / cement kilns</p>	Description / flow chart or receipts and copy of authorization of the recovery facility. Receipts from the TSDF
MFM Credit 3C.5	Ferrous metals				Pre-treatment efficiency to achieve - Non-Ferrous Metals: (product analysis with foreign fraction of plastic < 5%, of electronic circuit boards < 1% in weight)	sample measurements, photos
MFM Credit 3C.6	Non-ferrous metals				Pre-treatment efficiency to achieve - Ferrous metals: foreign fraction of plastic <5%, of electronic boards <1% in weight	sample measurements, photos
MFM Credit 3C.7	Electronic circuit boards				Pre-treatment efficiency to achieve - Electronic circuit boards dry, without large structure or posterior panels. no refrigeration elements / no transformers / no lithium	sample measurements, photos

					batteries, no electronic components >5 cm	
MFM Credit 3C.8	Non-recoverable materials				Pre-treatment efficiency to achieve - Non-recoverable material: foreign fraction of plastic < 10%, metals < 5%, electronic boards < 0.5%	sample measurements, photos
MFM Credit 3C.9	Plastics				Pre-treatment efficiency to achieve - Plastics: plastic fraction amount > 75 in weight, with foreign fraction of Max 5% of rubber - Max 5% of glass -Max 5% of wood - Max 1% foam - Max 15% of metals (including cables and electronic circuit boards)	sample measurements, photos
<b>MFM Credit 3D</b>	<b>IT appliances, telephones, small household appliances, lighting fixtures (without lightbulbs), toys, Hi-Fi systems and all other equipment not included in the other categories</b>	<b>10</b>				
MFM Credit 3D.1	Printed wiring boards				Pre-recycling - Separation of Printed Wiring Boards (PWBs). Any processing of PWBs (cutting / crushing / etc) to occur in controlled conditions, incl. dust capture, ventilation etc. (only for recyclers, dismantlers are not allowed to do so) Post-recycling - Recovery of material from the Printed Wiring Boards (PWBs) in controlled conditions. The minimum recovery	Description / flow chart

					<p>rates should be as below:</p> <ul style="list-style-type: none"> <li>- Ag (90%)</li> <li>- Au (90%)</li> <li>- Cu (90%)</li> <li>- Pd (90%)</li> <li>- Pb (NA)</li> </ul> <p>And at least two elements out of</p> <ul style="list-style-type: none"> <li>- Ni (NA)</li> <li>- Sn (NA)</li> <li>- Sb (NA)</li> </ul>	
MFM Credit 3D.2	Li-ion batteries				<p><u>Pre-recycling</u> - Separation of Li-ion batteries</p> <p><u>Post-recycling</u> - send Li-ion batteries to an authorized battery recycler with the technology required for Li-ion batteries</p>	Receipts, copy of authorization, evidence of the technology required to handle Li-ion batteries
MFM Credit 3D.3	Other batteries				<p><u>Pre-recycling</u> - Separation of other batteries</p> <p><u>Post-recycling</u> - Send normal batteries to an authorized battery recycler (not TSDF)</p>	Description and photos. Receipts from the TSDF
MFM Credit 3D.4	Mercury containing lights / other parts				<p><u>Pre-recycling</u> - Separation of mercury-containing back-lights</p> <p><u>Post-recycling</u> - Treatment of mercury-containing fractions as per the corresponding post-recycling criteria in the category Discharge light sources</p>	Description / flow chart
MFM Credit 3D.5	Cartridges				<p><u>Pre-recycling</u> - Separation of cartridges</p> <p><u>Post-recycling</u> - Safely recycle cartridges, preferably through Original Equipment Manufacturers (OEM) or cartridge remanufacturers</p>	

MFM Credit 3D.6	BFR containing plastics				<p><u>Pre-recycling</u> - Separate and safely store BFR-containing plastic fractions</p> <p><u>Post-recycling</u> - Sale of BFR-plastic to a customer in need for BFR-containing resins, or disposal of BFR-plastic in the TSDF / cement kilns</p>	Description / flow chart
MFM Credit 3D.7	Compressor/capacitor oils				<p><u>Pre-recycling</u> - Recover compressor oils in leakage-proof containers</p> <p><u>Post-recycling</u> – Dispose-off the used oil as per the mandate in the hazardous waste authorization</p>	Description / flow chart
MFM Credit 3D.8	Asbestos / asbestos-containing parts				<p><u>Pre-recycling</u> - Separation and safe packing and labelling of asbestos / asbestos-containing parts</p> <p><u>Post-recycling</u> - Send asbestos-containing bags to the TSDF</p>	Description / flow chart
MFM Credit 3D.9	Ferrous metals				Pre-treatment efficiency to achieve - Non-Ferrous Metals: (product analysis with foreign fraction of plastic <5%, of electronic circuit boards <1% in weight)	sample measurements, photos
MFM Credit 3D.10	Non-ferrous metals				Pre-treatment efficiency to achieve - Ferrous metals: foreign fraction of plastic <5%, of electronic boards <1% in weight	sample measurements, photos
MFM Credit 3D.11	Electronic circuit boards				Pre-treatment efficiency to achieve - Electronic circuit boards dry, without large structure or posterior panels. no refrigeration elements / no transformers / no lithium batteries, no electronic components >5 cm	sample measurements, photos

MFM Credit 3D.12	Non-recoverable materials				Pre-treatment efficiency to achieve - Non-recoverable material: foreign fraction of plastic < 10%, metals < 5%, electronic boards < 0.5%	sample measurements, photos
MFM Credit 3D.13	Plastics				Pre-treatment efficiency to achieve - Plastics: plastic fraction amount > 75 in weight, with foreign fraction of Max 5% of rubber - Max 5% of glass - Max 5% of wood - Max 1% foam - Max 15% of metals (including cables and electronic circuit boards)	sample measurements, photos
<b>MFM Credit 3E</b>	<b>Discharge light sources: fluorescent lights and compact light sources</b>	<b>10</b>				
MFM Credit 3E.1	CFL and mercury-containing lights				<u>Pre-recycling</u> - CFL and mercury-containing lights processing (only for recyclers, dismantlers are not allowed to do so) breaking / crushing process conducted under vacuum for capture of dust and mercury vapor <u>Post-recycling</u> -	Description / flow chart
MFM Credit 3E.2	Hg-containing phosphate powder				<u>Pre-recycling</u> - Separation & recovery of Hg-containing phosphate powder <u>Post-recycling</u> - - Send phosphate powder to an authorized mercury recovery facility. Or if the technology is available, recovery of mercury on-site, storage in leakage-proof containers, and dispatch to relevant industry - In absence of mercury recovery from the phosphate powder, send	Description / flow chart, receipts and copy of authorization of the recovery facility.

					the Hg-bearing powder and other Hg-containing waste to a TSDF	
MFM Credit 3E.3	Hg emissions monitoring				Monitoring of Hg emissions in ambient air and monitoring of shop floor emissions	Hg measurement reports
MFM Credit 3E.4	Air pollution control				Air cleaning through appropriate air pollution control system such as HEPA (High Efficiency Particulate Arrestor) filter system or activated carbon filter system or any other equivalent system; dust / residue collection in appropriate labelled containers and then disposal at a TSDF	Description / flow chart. Receipts from the TSDF
	<b>Total</b>	<b>100</b>				

Supply Chain Management						
Credit	Credit Description	Credit Points	Sub Credits	Sub Points	Credit Requirement Description	Documentation
<b>SCM Credit 1</b>	<b>Vendors, Partners and Service Providers</b>	<b>35</b>				
SCM Credit 1.1	Authorization of downstream vendors, partners and service providers		5		The following requirements are necessary while engaging with vendors, partners and service providers <ul style="list-style-type: none"> <li>- Formal business registration of vendors and service providers</li> <li>- Relevant authorizations by respective SPCB under applicable rules for all vendors, partners and service providers (i.e. refurbishers, other collectors, dismantlers, recyclers, who take care of certain products/fractions not managed on-site;)</li> </ul>	List of <ul style="list-style-type: none"> <li>- downstream partners</li> <li>- products/fractions sent,</li> <li>- processes conducted by the downstream vendor and output material</li> <li>- contact details</li> <li>- copy of registration</li> <li>- authorization documents</li> </ul>
SCM Credit 1.2	Selection of downstream vendors, partners and service providers		10		Selection of downstream vendors, partners and service providers should have the following - <ul style="list-style-type: none"> <li>- Clear material balance to indicate that material is not sent to informal sector from that facility</li> <li>- Compliances on environmental, social and occupational health parameters</li> </ul>	List the following - <ul style="list-style-type: none"> <li>- Vendor selection criteria</li> <li>- Written description of steps undertaken to ensure that the material is not sold to informal players, such as collection of bills from downstream vendors etc.</li> </ul>
SCM Credit 1.3	Depth of the supply chain check		10		The downstream chain check has to be done for the following - <ul style="list-style-type: none"> <li>- checking downstream vendors to 1 level (own vendors),</li> <li>- checking downstream vendors to 2 levels (own vendors' vendors)</li> </ul>	List of <ul style="list-style-type: none"> <li>- downstream vendors 1 level</li> <li>- downstream vendors 2 level</li> </ul>

SCM Credit 1.4	Selection of downstream customers Note: Downstream customers are those that buy output products / fractions directly from the recycler		5		The following requirements are necessary while engaging downstream customers - Formal business registration of customers - Relevant authorizations by respective SPCB under applicable rules - Clear evidences that material is not sent to informal sector from the customer end	List of - downstream customers - products/fractions sent - processes conducted by the downstream customer - contact details - copy of registration - authorization documents - Written description of steps undertaken to ensure that the material is not sold to informal players, such as collection of bills from downstream vendors etc.
SCM Credit 1.5	Membership / agreement with a TSDF for any hazardous material disposal		5		Recyclers disposing hazardous material through TSDF should have a clear membership or agreement with the closest TSDF available	Copy of - the membership certificate / agreement copy - latest bills/receipts
<b>SCM Credit 2</b>	<b>Transportation</b>	<b>45</b>				
SCM Credit 2.1	Fleet ownership and control		5		Fleet should have all necessary regulatory authorization for - - all the transporters - recycler's own fleet	List of all transporters and own vehicles + list of relevant authorizations
SCM Credit 2.2	Hazardous goods transport process		5		List of - - all hazardous goods transported - transport manifest - availability of MSDS wherever applicable	List of all supporting documents
SCM Credit 2.3	Third party insurance against transport risks		5		Third party insurance to be made available for any accident, also involving hazardous material during transport	Copy of insurance policy
SCM Credit 2.4	Records		10		Provision of documents for the previous 3 years on - - vehicle maintenance and Pollution	Sample record

					Under Control - driver safety record	
SCM Credit 2.5	Minimum damage during loading and unloading		5		Minimum damage should be ensured during material loading and unloading at the recyclers' facility	Description and photos
SCM Credit 2.6	Transport vehicle locking system		5		A good transport vehicle locking system should be available to avoid any pilferage between collection location and destination. Provide - - Inventory check upon receipt of goods - Inventory check upon delivery of goods	Description and photos
SCM Credit 2.7	GPS tracking of the transporter		5		Use of systems such as GPS tracking along with the transporters to validate material movement in the supply chain	Sample tracking report
SCM Credit 2.8	Tracking ID for consignment		5		Tracking ID for consignment should be made available	Description and photos
<b>SCM Credit 3</b>	<b>Innovation &amp; Exemplary Performance</b>	<b>20</b>				
SCM Credit 3.1	Innovative projects		10		The facility is eligible for innovation credits if its operational practices are innovative. Innovation under this credit requirement is - - First time developed & used in the e-waste recycling industry - Innovative international technology modified to meet Indian requirements and cost competitiveness - Replicability of the technology in the recycling industry	Details of the project Description and Photos
	General Aspects			2		
	Environmental Aspects			2		
	Material Flow Management			2		
	Supply Chain Management			2		
	Other Aspects			2		

SCM Credit 3.2	Exemplary Performance		10		The facility is eligible for exemplary performance credits if its operational practices greatly exceed the credit requirements of the GreenCo Rating System for Recyclers	Details of the project Description and Photos
	General Aspects			2		
	Environmental Aspects			2		
	Material Flow Management			2		
	Supply Chain Management			2		
	Other Aspects			2		
	<b>Total</b>	<b>100</b>				

Environmental Management						
Credit	Credit Description	Credit Points	Sub Credits	Sub Points	Credit Requirement	Documentation
EM Mandatory Requirement 1	Environmental management policy	Mandatory requirement - No points			To demonstrate the commitment of the company towards improving its environmental performance. A policy provides framework and direction for environmental efficiency improvement activities in the company. A policy with clearly defined objectives and commitment to systematically enhance environmental performance and improve efficiency	Copy of the policy signed by the head of the facility
EM Credit 1	<b>Awareness Creation and Employee Involvement in the areas of energy conservation, water conservation and waste management</b>	<b>10</b>			Encourage recycling facilities to create awareness about the environmental aspects among all employees and involve employees while taking up efficiency improvement projects on a continuous basis - Programs and initiatives taken for employee involvement like poster displays, competition, slogans, environmental day celebrations, etc. - These programs should be aimed at involving all the employees	A write up explaining the different awareness programs conducted during the year and strategies adopted for employee involvement highlighting - date of program, agenda of the program, participants, contents of the presentations, photographs, results, feedback, etc.
<b>EM Credit 2</b>	<b>Energy Efficiency</b>	<b>25</b>				
EM Credit 2.1	Metering and monitoring systems		<b>10</b>		Energy monitoring and accounting - Install energy monitoring system and monitor energy consumption at the supply and user ends - Analyze the daily report and take corrective actions immediately if there is an increase in energy	Schematic diagram of the energy monitoring system Details of the percentage of energy consumers covered as part of the energy monitoring system Sample monitoring reports

					consumption. Document reasons for increase in energy consumption, analysis carried out and the corrective measures taken - Management to conduct monthly reviews pertaining to energy efficiency activities	generated on a daily basis Sample documentation of daily variance analysis and corrective action taken Sample minutes of the monthly review meetings
EM Credit 2.2	Reduction in specific energy consumption through implementation of efficiency improvement projects		<b>5</b>		To achieve consistent reduction in specific energy consumption - - Monitor the specific energy consumption on a daily basis - Document the specific energy consumption variations on a daily, monthly and yearly basis - List of energy saving projects implemented	Documents indicating the SEC of the company Details of the projects implemented to reduce specific energy consumption
EM Credit 2.3	Substitution with Renewable Energy		<b>10</b>		To bring in a commitment to maximize the share of renewable energy generation and utilization thereby reducing dependence on fossil fuels - Clear targets & action plans to achieve the set targets - % of overall energy consumption substituted with renewable energy	Documents highlighting - Targets and action plan - Renewable energy systems installed - Annual generation of renewable energy (electrical & thermal) in equivalent kW
<b>EM Credit 3</b>	<b>Water Conservation</b>	<b>25</b>				

EM Credit 3.1	Water metering and monitoring		<b>10</b>	<p>The facility should have a system for water metering at critical locations accounting for more than 80% of fresh water consumption and wastewater discharge</p> <p>Water balance indicating</p> <ul style="list-style-type: none"> <li>- Intake from sources – all sources to be covered</li> <li>- Fresh water users – all individual users of consumption accounting for more than 10% of the total water consumption</li> </ul> <p>Monitoring of wastewater generated, recycled or reused, &amp; discharged as effluent</p> <p>Monitoring, variance analysis and reviews of water consumption on a monthly basis</p>	<p>Detailed water balance of the plant</p> <p>Detailed description of the monitoring system implemented for accounting water consumption</p>
EM Credit 3.2	Reduction in Specific Water Consumption through implementation of water conservation projects		<b>5</b>	<p>The facility should have employed strategies and concepts for achieving reduction in specific fresh water consumption</p> <ul style="list-style-type: none"> <li>- Monitor the specific water consumption on a daily basis</li> <li>- Document the specific water consumption variations on a daily, monthly and yearly basis</li> <li>- List of water saving projects implemented</li> </ul>	<p>Documents indicating the SWC of the company</p> <p>Details of the projects implemented to reduce specific water consumption</p>
EM Credit 3.3	Rain Water Harvesting		<b>10</b>	<p>Facility should have implemented rainwater harvesting system to capture run-off water from roof and non-roof (paved and unpaved) areas</p> <p>The captured rainwater should be utilized in the facility to preferably</p>	<p>Provide details of the rainwater harvesting system installed – area, rainfall, storage or recharge structures, potential captured, freshwater substituted, etc.</p>

					substitute freshwater or recharge groundwater	Details of the quantity of rainwater harvested
<b>EM Credit 4</b>	<b>Waste Management</b>	<b>40</b>				
EM Credit 4.1	Waste Inventorization and Monitoring		<b>5</b>		<p>All types of hazardous and non-hazardous wastes should be quantified at each stage of waste management-</p> <ul style="list-style-type: none"> <li>- generated</li> <li>- recycled / reused</li> <li>- recovered</li> <li>- treated</li> <li>- landfill / disposed off</li> </ul> <p>Along with quantity, the inventorization should also include the source of each waste generated</p>	<p>Provide the</p> <ul style="list-style-type: none"> <li>- Documents showing the waste inventory - hazardous and non-hazardous waste</li> </ul>
EM Credit 4.2	Collection, segregation, storage & disposal mechanism		<b>10</b>		<p>Under this credit</p> <ul style="list-style-type: none"> <li>- Collection, segregation, storage and disposal mechanism should be available for different types of wastes (bio degradable, non bio-degradable, hazardous and non-hazardous) &amp; e-waste</li> <li>-- System to handle the internal transport of waste from the place of generation to the place of storage</li> <li>-- Different types of wastes should be stored separately in a secured place until further processing / handling / treatment / disposal has taken place</li> <li>- All employees of the unit / facility should have the basic understanding of waste management system</li> </ul>	<p>Provide the</p> <ul style="list-style-type: none"> <li>- plant layout indicating the location of waste collection bins, scrap yard, etc.</li> <li>- Photographs of present waste management system.</li> <li>- A brief write up on the different training programs conducted for employees to educate them on waste collection, segregation and disposal mechanisms.</li> </ul> <p>Relevant supporting documents should be attached</p>

EM Credit 4.3	Solid waste management		<b>10</b>		<p>For managing solid wastes, identify</p> <ul style="list-style-type: none"> <li>- List of hazardous waste management and non- hazardous waste management</li> <li>- Specify segregation and storage mechanism</li> <li>- List of projects highlighting the reduction of specific waste disposal through improvement in waste management</li> </ul>	<p>Furnish</p> <ul style="list-style-type: none"> <li>- Inventory showing the reduction in waste (hazardous and non-hazardous)</li> <li>- Detailed description of the projects implemented to achieve the reduction in solid waste (hazardous and non-hazardous)</li> </ul>
EM Credit 4.4	Liquid waste management		<b>5</b>		<p>The unit should meet the conditions prescribed by SPCB or local authority with respect to process effluent and sewage discharge</p> <ul style="list-style-type: none"> <li>- Monitor reduction in process effluent discharge and sewage discharge in the last 3 years</li> <li>- If zero discharge of process effluent or sewage is a mandatory requirement then it should be complied</li> </ul>	<p>A brief write-up explaining the amount of liquid waste generated. The write up should explain in detail the initiatives taken to reduce the amount of liquid waste (process effluent and sewage) generated</p>
EM Credit 4.5	Gaseous waste management		<b>10</b>		<p>Prevent release of VOCs, SPM, TPM, SOx, NOx and other gaseous pollutants to environment and maintain ambient air quality within the plant with respect to the upcoming statutory requirements</p> <ul style="list-style-type: none"> <li>- Reduction in Ambient Air quality pollutants</li> <li>- Reduction in Gaseous Pollutants Emission with respect to latest norms released by legal authorities</li> </ul>	<p>Document on shop floor and ambient air emissions levels</p> <ul style="list-style-type: none"> <li>- Consent copy of “Air Pollution (Prevention and Control of Pollution) Act” issued by SPCB</li> <li>- Documents detailing any other compliance options issued by the local authority, customer or corporate specific to air emissions control</li> <li>- A brief write up explaining the details of activities done to achieve the norms</li> </ul>
	<b>Total</b>	<b>100</b>				

