



# NATURE SCIENCE FOUNDATION

(A Unique Research and Development Centre for Society Improvement)  
 [ISO QMS (9001:2015), EMS (14001:2015), OHSMS (45001:2018) & EnMS (50001:2018) Certified and Ministry of MSME Registered Organization]  
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## APPLICATION FOR E-WASTES MANAGEMENT AUDIT TO ACADEMIC INSTITUTIONS AND INDUSTRIAL SECTORS

<b>Reference number</b>	NSF/EWMA 2022-23/Orgn.Name/	Dated:
<b>Name of the Organization &amp; Address</b>		
<b>Date of Audit</b>		
<b>Name of the Lead and EMS Auditors</b>		
<b>Is it a new Audit (or) renewal process?</b>	<input type="checkbox"/> New Audit <input type="checkbox"/> Renewal Audit Last Audit Date: __/__/____	
<b>Purpose</b>	To ensure that the Electronic (E) wastes collected and handled properly which will eventually reduce the E-wastes generation and pollution. In order to reduce the E-Wastes pollution and affect the environmental health, E-Wastes Management Audit may be carried out as per the Checklists. Proper recycling of E-Wastes helps to extract useful materials and reduces the hazardous wastes mixing into atmosphere. Ecofriendly youth leadership, green practices, social responsibility and Institutional values are to comprehend the relationship with the ecosystem for sustainable environment with respect to the E-Waste management practices followed.	
<b>PROCEDURE</b>		
<b>Procedure</b>	<b>Description</b>	<b>Responsibility</b>
Annual plan	Each year a plan for the Electronic (E) Wastes Management audit is prepared by Management / Representative and to ensure that the E-Waste Management system is implemented in the campus to reduce the environmental pollution and to conserve natural ecosystems.	Management Representative
Walk-through	Based on the checklists, the Electronic (E)	Audit team

Audit	wastes management audit is carried out in the form of observations in the campus.	
Follow-up of action	Corrective action has to be undertaken and implemented within the prescribed duration	Environmental Coordinator
Reporting and Recommendations	Submission of corrective action in the form of report in association with Eco club / Student Chapters / Forums of the Institute	Lead Auditor ISO 14001:2015 EMS Auditor

### Requirements of general features

1. Total Area\_\_\_\_\_, Building constructed area\_\_\_\_\_, Open area
2. Year of establishment:
3. Total Strength of Students:\_\_\_\_\_ (No. of Boys\_\_\_\_\_ and No. of Girls\_\_\_\_\_)
4. Total Strength of Hostellers: \_\_\_\_\_ (No. of Boys\_\_\_\_\_ and No. of Girls\_\_\_\_\_)
5. Total Strength of Teaching Staff: \_\_\_\_\_ (No. of Males\_\_\_\_and No. of Females\_\_\_\_)
6. Total Strength of Non-Teaching Staff:\_\_\_\_(No. of Males\_\_\_\_and No. of Females\_\_\_\_)
7. Total Strength of Employees: \_\_\_(No. of Males\_\_\_and No. of Females\_\_\_)
8. Year of previous NAAC Accreditation:\_\_\_\_\_ Grade Obtained: \_\_\_\_\_
9. Size of E-Wastes storage facility \_\_\_\_\_
10. Name of the Authorized Refurbrisher \_\_\_\_\_
11. Name of the Authorized transporter \_\_\_\_\_
12. Name of the Authorized Recycler / Dismantler\_\_\_\_\_

### Check list for Audits Electronic (E) Waste Management Audit (To ensure at least 50% of the following should be attained)

- \* Total number of Information Technology E-Wastes need report
- \* Total number of Consumer Electronics E-Wastes need report
- \* total number of Consumer Electronics hazardous wastes need report
- \* Total number of Laboratory Equipment E-Wastes need report
- \* Establishment of E-Wastes storage facility
- \* Preparing an internal E-Wastes audit procedure
- \* Designating a representative to monitor the E-Wastes generation
- \* Labeling and segregation of E-Wastes based on type and toxicity
- \* Frequency of E-Wastes collection Record maintenance
- \* Education, training, workshop, camp etc.. related to E-Wastes for stakeholders
- \* MOU with E-Wastes transporter, refurbisher and dismantler
- \* Extended producer responsibility included in the purchase policy to handle E-Wastes
- \* Implications of utilizing refurbished E-Wastes in purchase policy
- \* E-Wastes handlers equipped with suitable safety gears
- \* Installation of exclusive E-Wastes bin to collect E-Wastes in campus from stakeholders
- \* Implementation of Government and Non-Governmental Organization schemes
- \* E-Waste types like computers, mobile phones, sensors, electrical and electronic items
- \* Fridges, freezers and other cooling equipment and telecommunications equipment
- \* Consumer electronic devices and solar panels, solar water heaters
- \* TVs, LCD projectors, monitors and screens, public addressing system
- \* Tube lights, Flourescent bulbs, LED, CFL bulbs, ultra-violet lights and etc.
- \* Vending machines, HVLS fans, exhaust fans, motors, electric wires, switches
- \* Power generators, uninterruptible power supply (UPS), AC machines, lifts, ventilators,
- \* Refrigerators, oven, microwave oven, water pumps, etc
- \* RO Plants, water doctors and distillation units, water pumps

## I. Qualitative measurement

S.No	Requirements and checklists of the audit	Conformity		
		YES	NO	NA
1.	Whether the concept of E-Waste management is followed in the campus?			
2.	Have internal E-Wastes audit procedures been developed and implemented in organisation?			
3.	Has a Management Representative, E-Wastes Specialist, Laboratory Staff been assigned?			
4.	Whether E-Waste management practices included in the purchase policy of electronic items?			
5.	Whether an authorised refurbisher appointed to manage the E-Waste?			
6.	Are the E-Wastes refurbished and used again in the institution?			
7.	Whether any MOU signs with authorised recycler / dismantler to recycle / dismantle the E-Wastes?			
8.	Whether E-Wastes collection bins installed in the campus for collection of E-Wastes?			
9.	Whether E-Wastes are handled based on its toxicity with safety precautions?			
10.	Whether E-Wastes awareness programmes are conducted for stakeholders?			
11.	Are the E-Waste handlers provided with safety gears, wearing masks and caps as per the guidelines?			
12.	Signing MOU with Government and NGOs to ensure proper handling of E-wastes			
13.	Any initiative to reduces E-Wastes in the campus been developed and action taken?			
14.	Projects and dissertation works, scholarly publication on E-Wastes management carried out by staff members and students			
15.	Whether E-Wastes managed by extended producer responsibility model being carried out?			
16.	Whether the generated E-Wastes are segregated onsite and method of segregation and record maintenance?			
17.	Whether the E-Wastes are transported to refurbisher and Dismantler by authorised transporters?			
18.	Implementation of Government and Non-Governmental Organizations schemes to create awareness on E-Wastes			
19.	Whether E-Vehicles are used inside the campus to reduce the E-wastes pollution?			
20.	Whether E-Wastes are collected frequently and segregated and evidence on record entry?			
21.	E-Waste drives inside and outside the campus to educate people about the electronic waste disposal.			

## II. Quantitative measurements

S.No	Name of the Electrical items / Equipment / Instruments	E waste code by NSF	Quantity
1.	Mainframe	ITEW	
2.	Internet connectivity Accessories	ITEW	
3.	Personal computer	ITEW	
4.	Laptop	ITEW	
5.	Dot matrix Printer	ITEW	
	Laser Printer	ITEW	
	Ink jet printer	ITEW	
6.	Cartridge	ITEW	
7.	Xerox machine	ITEW	
	Scanner	ITEW	
	Fax machine	ITEW	
8.	Telephones	ITEW	
9.	Cellar phones	ITEW	
10.	Television	CEEW	
11.	Solar panel	CEEW	
12.	Water heater	CEEW	
	Solar water heater	CEEW	
13.	Split AC	CEEW	
	Window AC	CEEW	
	Centralized AC	CEEW	
	Air Cooler	CEEW	
14.	Tube light	CEEW	
	Fluorescent lamps	CEEW	
	Halogen lamp	CEEW	
	Sodium Vapour lamp	CEEW	
	CFL	CEEW	
	LED tube lights	CEEW	
	LED Focusing lights	CEEW	
15.	Ceiling Fan	CEEW	
	Pedestal Fan	CEEW	
	Table Fan	CEEW	
	Portable Fan	CEEW	
16.	Lead acid batteries	CEHW	
17.	Lithium Ion Battery	CEHW	
18.	Cable and wires	CEEW	
19.	Inverter with UPS	CEEW	
20.	Switch board	CEEW	
21.	Solar panel	CEEW	
22.	LCD projector	CEEW	
23.	Refrigerator	CEEW	
24.	Water doctor	CEEW	
25.	RO water plant	CEEW	
26.	Generator	CEEW	
27.	Pump	CEEW	
28.	Motors	CEEW	
29.	Compressor	CEEW	

30.	Vacuum Cleaner	CEEW	
31.	Ventilator	CEEW	
32.	Insect trap	CEEW	
33.	Podium containing Mike, Speakers, Amplifiers, Radio, Camera, Sensors, etc.	CEEW	
34.	<b>Civil Engineering Equipment / Machines</b> Compressing testing machine, Universal testing machine, Total Station, Theodolites, Flexure testing machine, Torsion testing & Izod impact testing machines, Hardness testing machine, Beam deflection test apparatus, Centrifugal Pump, Gear Pump, Submersible pump, Reciprocating Pump, Pelton Wheel turbine, Francis turbines / Kaplan turbine, Turbidity meter, pH meter, Conductivity meter, Jar test apparatus, BOD incubator, COD digester, Direct shear apparatus, Triaxial shear apparatus,	LEEW	
35.	<b>Equipment, Instruments and Machineries related to Life Sciences and Biological Sciences including Biotechnology, Nanotechnology, Food Technology, etc.</b> Electronic Balances, pH Meter, Hot-air-Oven, Microwave Oven, Laminar Air Flow, Autoclave, Microscopes, , Rotatory Evaporators, Centrifuges, Electrophoretic apparatus, Chromatography devices, Grinders, Mixers, Deep Freezers, BOD Incubator, COD Digester, Extraction apparatus, Incubators, CO2 incubator, Heating Mantle, Vacuum pump, Vortex mixer, Magnetic stirrer, Gel rocker, Sonicator, Growth Chambers, Air curtains, Aerators, Spectrophotometers, Calorimeters, Turbidity meter, Colony Counter Water bath, Dry bath, Thermocycler, Gene gun, Gel Documentation System, Transilluminator, Ice maker, ELISA Reader & Washer, Aquarium, Zebrafish / animal house facility, Mechanical & Orbital Shakers, Cyclo mixer, Lyophilizer, Incinerators, Ammeter, Flame Photometer, Fluorimeter, Fermentors, Reactors, Particle size Analyzer, XRD, FTIR, Muffle Furnace	LEEW	
36.	<b>Chemical Sciences and Engineering Equipment / Machines</b> Distillation Units, Packed bed distillation, Roll crusher, Jaw crusher, Sieve analysis machine, Shell and tube heat exchangers, Plate and frame filter press, Fume hood,	LEEW	

	Nephelometer, Membrane Filtration Apparatus, Jar test apparatus		
37.	<p><b>Electrical, Electronics and Communication Engineering Equipment / Machines</b></p> <p>DC Shut motor, DC Series motor, DC Compound motor, DC Shunt motor, DC Compound generator, DC series generator, Single phase &amp; Three phase transformers, Single phase &amp; Three phase auto transformers, Loading rheostat, single phase &amp; Three phase, Inductive &amp; Capacitive load, Power electronics trainer kits, Three phase squirrel cage induction motor, Single phase &amp; Three phase induction motor, Three phase slip ring induction motor, AC generator, Stabilizers, Synchronizer, Half and Fully controlled converters, Buck, Boost and buck-boost converters, Single phase and Three phase inverters, Synchronos, CRO, DSO, CRO, Microprocessor trainer kits, Microcontroller trainer kits, Arudino trainer kits, Digital electronics trainer kits, Flip-flops, Counters, Half adder, Full adder circuits,</p>	LEEW	
38.	<p><b>Mechanical Engineering Equipment / Machines</b></p> <p>Lathe machine, Milling machine, Drilling machine, Slotting machine, Shaping machine, Cylindrical, Grinding, Coordinate Measuring, Universal testing devices, Thermal Conductor, Air Compressor, Single Cylinder 4 Stroke Diesel Engine, CNC Turning Centre, Kaplan, turbine, Pelton wheel turbine, Francis turbine, Venturimeter, Orifice meter, Nephelometer, CAD &amp; CAM machines, Tensile strength apparatus, Younggus modules apparatus, XRD machines,</p>	LEEW	
39.	<p><b>Textile Technology Equipment / Machines</b></p> <p>Ring spinning, Rotor spinning, Weaving machine, Ruti C loom, Circular Knitting machine, Curing chamber, Wash Fastness Tester, Streamer, Washing machine, Dryer,</p>	LEEW	

\*ITEW- Information technology E waste

\*\*CEEW- Consumer Electronic E waste

\*\*\*CEHW- Consumer Electronic Hazardous waste

\*\*\*\*LEEW- Laboratory Equipment E waste

### III. E-Wastes handling Data sheet

Description	Type of Waste	Number	Weight
E-Wastes generated	ITEW		
	CEEW		
	CEHW		
	LEEW		
E-Wastes stored	ITEW		
	CEEW		
	CEHW		
	LEEW		
E-Wastes Transported	ITEW		
	CEEW		
	CEHW		
	LEEW		
E-Wastes Sent to Refurbisher	ITEW		
	CEEW		
	CEHW		
	LEEW		
E-Wastes Sent to Dismantler	ITEW		
	CEEW		
	CEHW		
	LEEW		
E-Wastes managed by Extended producer responsibility model	ITEW		
	CEEW		
	CEHW		
	LEEW		
E-Wastes Recycled and Transported back to Institution	ITEW		
	CEEW		
	CEHW		
	LEEW		

A minimum of 50% criteria should be attained

**Note:** *This Audit process and Certificates are valid for three years only from the date of Audit*

**Signature of the Chairman**

**Signature of the Lead Auditor**

**Signature of the EMS Auditor  
Environment Management System**

**Signature of the Auditor / Experts  
Certified by NSF / IGBC / LEED / GRIHA**