

## **Addressing E-waste under the Super-Efficient AC Programme of EESL (M/s VOLTAS Ltd. - Implementing partner)**

### **1.0 BRIEF ON SUPER EFFICIENT AC [SEAC] PROGRAM**

The SEAC program of EESL is a first of its kind program by EESL focussed upon Energy Efficiency in an Environmentally Sound manner. M/s VOLTAS, one of biggest manufacturer and supplier of the 5 Star rated SEACs, is the implementing partner. One of the key features of the ACs are that they use R-32 Eco-Friendly Refrigerant Gas which have lower Environmental Impact

### **2.0 AIR CONDITIONING AND E-WASTE ISSUES**

Any Air Conditioner (any Part or spare or whole) or Old ACs (Buy-Back /End of Life) which is no longer intended for any use, coming out from any process whether manufacturing or repair or supply or storage or buy-back or other, may be considered as an e-Waste for the Program.

#### **WHAT IS E-WASTE ?**

Any electrical and electronic equipment, whole or in part discarded as waste by the consumer or bulk consumer as well as rejects from manufacturing, refurbishment, and repair processes.

(Source: e-Waste rules 2016).

Various wastes generated under the SEAC program also falls under the Schedule I of the e-Waste (Management and Handling) Rules 2016.

#### **LEGAL REQUIREMENTS ?**

The e-wastes are required to be managed in line with the applicable legal requirements of our country includes the e-Waste (Management and Handling) Rules 2016 and e-Waste Management Amendment Rules 2018 notified by the Ministry of Environment, Forests and Climate Change Government of India

The materials/metals contents under the e-wastes, if recovered properly, can be a useful resource and may have some useful economic value to the user. Such materials may include plastics, iron, glass, aluminium, copper and precious metals (such as silver, gold, platinum, and palladium), and lead, cadmium, mercury etc.

**The Refrigerant Gases** (cooling refrigerant) being used in all Air Conditioning units (ACs), in one form or another, may be an Ozone Depleting Substance (ODS) and have some Global Warming Potential (Refrigerant gases are Green House Gases). Some of the Old ACs may contain Hydro Chloro Fluoro Carbons (HCFCs) like R-22 gas that are Ozone Depleting Substance (ODS) i.e. these gases may deplete OZONE layer if released on the atmosphere allowing more Ultra Violet radiation contributing to increased health risks like Skin cancer, eye damage etc. Further, HCFCs are also potent Green House Gas (GHG) contributing to Global Warming and Climate Change and may promote extreme weather events, rising sea levels.

#### **ARE SEACs SAFER FOR ENVIRONMENT ?**

**YES !** However, breakage/dismantling in unscientific way could cause damage to environment or human being (directly or indirectly). Chances are there that user might encounter chemicals which could cause irritation in skin & eyes, might cause dizziness etc. Also, sharp edges of electronic items could cause damage to body.

Any leakages of Refrigerant gases may have negative impacts on Environment (Gases like R-22 are Ozone Depleting Substances. Also, Gases like R-410A, R-22 and even R-32 have Global Warming Potential.)

The R-32 refrigerant coolant gas being used under the SEAC Program are non-ODS (unlike other ODS gases e.g. R-22) but have Global Warming Potential (GWP) which are comparatively lower than the GWP of refrigerants like R-410A and R-22). Yet it still must be handled and disposed carefully.

### **3.0 MANAGING E-WASTE: THE SUSTAINABLE WAY.**

M/s VOLTAS the implementing partner is committed for addressing e-waste(s) that may be generated during the Supply, Installation, Maintenance and even Buy-Back of the replaced/old AIR Conditioners during the Program. The same is being ensured in accordance with the applicable rules and requirements under the concept of "Extended Producer Responsibility" (EPR).

The Air Conditioning units, including their components and consumables which are part of the product at the time of discarding or maintenance process, are being handled safely for safer disposal based on type of waste generated.

Voltas has done tie-up with the government authorized expertized E-Waste Recycler for facilitating its Channel partners/customers to recycle, dispose and/or discard Electrical and Electronic Products after its end-of-life (when a product/parts is non-operational or non-repairable) and including spare parts.

### **Key steps involved in the e-Waste management process under the SEAC program includes:**

1. The e-waste materials (End-of-Life products or Defective Spare parts) are sent back to Authorized Recycler(s) for appropriate disposal and recycling of e-wastes associated with ACs.
2. The e-waste materials are physically verified upon receipt of ACs by the recycler and the type of wastes associated are being identified as Solid/Electronic Wastes/Oil/Gases/type of monitors etc.
3. The ACs are dismantled with care, and different type of wastes are collected in a segregated manner.
4. Solid wastes (Like Plastic, Metals, Glass, Batteries, Printed Circuit Boards, Cables and Cartoons etc.) are being stored separately for further processing.
  - a. Various materials are put into a shredder for size reduction and processed for recycling and disposal.
  - b. The ferrous and non-ferrous materials are separated and processed for recycling / re-use.
  - c. Various valuable metals (e. g. such as gold, silver, and copper) from the electronic parts are also recovered as possible through processes like smelting etc.
  - d. The monitor is also being broken and disposed of separately.
  - e. Plastic (a major component used for structural components) is also separated and sent/processed for recycling/disposal.
  - f. Packaging material are also processed for recycling/re-use.
5. Oil is extracted from the machine in a safe manner and is being sold to Authorized dealer for recovery or disposal as applicable. In case of any Oil Leakages, the oil-spillage point is cleaned following standard precautionary measures.
6. The Refrigerant gases are also recovered from the Old ACs (or ACs being repaired) in a safe manner and are being sent/sold to Authorized dealer/recycler for destruction (incineration etc.), reclamation, or safe storage to prevent emissions. During the process of recovery of these refrigerant gases, it is being ensured that:
  - a. There is no intentional venting of Refrigerant gases.
  - b. Refrigerant gases are recovered properly from old ACs or SEACs being repaired (as and when required).
  - c. During repair, it is being ensured that there are no leaks when Air Conditioners are being filled with Refrigerants.
  - d. In case of any unintentional Gas Leakage, window & doors are being opened to allow proper ventilation.
7. Old/Replaced Batteries are not touched with bare hand and are put in Bag/carton box only.

All the associated works are being undertaken by trained and certified technicians according to standard procedures for maintenance. The record of the e-Waste Managed is also being maintained as per the requirements.

#### **4.0 BENEFITS – e-Waste Management**

**Management of e-waste is to be ensured for sustainable benefits, as mentioned below:**

1. Recycling of the various wastes contributes to:
  - a. Conserve the ever-depleting natural resources.
  - b. Minimize the quantity of wastes to be handled for End-of-Life Disposal e. g. helps to eliminate landfills, prevents burning of rubber & Plastic in open area etc.
2. Proper scientific disposal of e-waste helps to reduce the environment pollution.
3. Preventing mixing of the Toxic materials present in e-waste with earth, air, water etc. helps to reduce health related issues.
4. Recovery of Oil & Refrigerant Gases from the AC Systems helps to minimize negative impact on Environment and Human Health.
5. Managing e-wastes in a systematic manner helps to ensure Legal Compliances, with no penal action and developing better trust among stakeholders etc.
6. It also generates Employment for others.

#### **5.0. REQUEST FOR OUR ESTEEMED STAKEHOLDERS/CONSUMERS**

Voltas is committed for safe handling and disposal of e-wastes and always seeks support from its stakeholders. The sustainable management of e-waste is an important step for a greener and cleaner earth. EESL's SEAC program is concerned for Sustainability actions and the program team requests its consumer to join this movement to make it successful by way of awareness, by way of contributing their end-of-life products and defective spare parts.

**Only Authorized Service Centre should be approached for any maintenance/service/leakage issues.**

It is **always GOOD** to consider selling Old ACs under Buy-Back Scheme instead of any informal mechanism to help scientific recycling and avoid Environmental pollution through release of Refrigerant gases in the air.

E-waste should be disposed of separately from the general waste stream via designated collection facilities identified by Voltas.

#### **6.0. Buy Back Option:**

Under this SEAC programme, customers need to place request to EESL for selling of their old ACs at the time of placement of order itself. Upon confirmation, EESL informs the channel partner i.e. Ms. Voltas on the same to ensure the pick-up the older ACs. The standard buyback cost will be handed over to the customer at the time of pick-up of the older ACs directly to the customer.

**For more details, please visit:**

1. <https://eeslmart.in/>
2. <https://www.myvoltas.com/e-waste-guidelines>.