

## **6. Terms of Reference (TOR)**

### **6.1 Project Overview**

With the increasing use of electronic/ electrical products, there has been a tremendous increase in E-waste generation in the NCT of Delhi every year. To effectively manage and dispose-off E-waste, the setting up of an e-waste Eco-park is being considered in the NCT of Delhi. The said project is expected to be one of its kind in India and thus the same is being monitored at the highest levels of the Government of NCT of Delhi and the Government of India.

To set-up the E-waste Eco-park, it has been felt essential to engage a well-qualified consultant for the preparation of a detailed project report on the basis of which a concessionaire may be appointed to set-up and operate the Eco-park.

E-waste Eco-park is an area where scientific and environmentally safe recycling, refurbishing, and dismantling is done and being an integrated facility, accommodates various handlers in the ecosystem such as e-waste refurbisher, dismantlers, recyclers, plastic waste processors, and others in the same premises. A full-fledged E-waste Eco-park will have all types of processing and recycling units of the materials recovered from e-waste so that materials could be extracted for future production. This facility will include dismantling, segregation, refurbishing, material-wise storage, testing, plastic recycling, and metal extraction facilities from different components of E-waste (PCBs, Li Ion batteries, Solar panels etc.).

### **6.2 Objectives of establishing E-waste Eco-park:**

- i. To provide infrastructure, training, tools to operators in the informal sector to groom them to be formal recyclers, and to reduce the adverse impact on environment and health due to the polluting technologies used in the un-organized sector for re-cycling E-waste.
- ii. To provide system for channelization of E-waste for environmentally sound recycling of E-waste in the organized sector

- iii. To allow increased efficiency and technical innovation in the reverse logistics supply chain management viz., rare earth metal extraction, etc.
- iv. To raise awareness levels among informal sector concerning E-waste recycling.

**Key proposed activities in E-waste Eco-park:**

- i. The activities in the E-waste Eco-park will be targeted towards the small and medium scale enterprises (SMEs) clusters involved in e-waste recycling.
- ii. The park shall have an authorized refurbishing market as a secondary product sale market for electronic goods, batteries, chargers, laptops, PC, and mobiles.
- iii. The park shall engage informal operators carrying out e-waste management activities for long time and having sufficient knowledgebase in the collection network. Cooperation with informal sector will help to ensure availability of e-waste for processing in the formal sector and will contribute to making the formal units economically viable.
- iv. Rare-earth metals like copper, silver, gold Aluminium etc., and reusable plastic extracted in the park will be transferred to mainstream production line. Institutes and manufacturers could be regular buyers.
- v. E-waste Eco-park may have rate contracts, in consultation with producers, retailers for buy-back of used electronic goods, and rates of electronic components for selling to a refurbisher.

The purpose of this ToR is to select a Consulting Firm (hereinafter referred as “Consultant”) for supporting DSIIDC towards providing project advisory services for development of E-waste Eco-park in Delhi.

**6.3 Scope of Work**

Based on primary and secondary research, the Consultant shall prepare the detailed conceptual plan for setting up of the proposed e-waste facility. The Plan should be developed with an aim to promote recycling and reprocessing of waste electrical and electronic equipment or assemblies or their components and having facilities as elaborated in the guidelines of the E-Waste (Management) Rules, 2016 or instructions if any issued by other

statutory body / NGT etc. as amended up to date. The scope of the work of the consultant would be as under:

- a) Carry out analysis of collection, storage, segregation, transportation, recycling and disposal system including best practices for facilities and methods deployed and furnish a technical and financial pre-feasibility report for setting up an e-waste facility at the site in compliance with rules/regulations/instructions issued by any Government body/Deptt./Statutory Body in this regard.
- b) Prepare project operating model & implementation strategy with institutional framework, staffing requirement, recommend levels and skills of staffing, procurement plan etc.
- c) Outline in detail various approvals and clearances that are required for the Project, such as pertaining to land, environment etc. and obtaining the same from the respective authorities concerned
- d) Prepare and submit report on location and analyse it with basic approach to circulation of e-waste, activity distribution, interconnectivity and external linkages.
- e) Analysis of the amount of e-waste, cost of operating collection sites/equipment/vehicles and the costs and environmental impacts of transporting e-waste as a function of the geo-economic context.
- f) Prepare project operating model & implementation strategy with institutional framework, staffing requirement, recommend levels and skills of staffing, procurement plan etc.
- g) To develop a detailed RFP (Request for Proposal) document for selection of Private Party / concessionaire 'for development of E-Waste Eco-Park or suggest any other business model best suited for development of Eco-park.
- h) To examine the existing e-waste recycling system and evaluate various disposal options.
- i) To study the problems/ risks posed by the recycling system at present/ future including assessment on impact on livelihood of waste aggregators, last mile pickers and other stakeholders of informal sector and to integrated unorganized sector in the process of e-waste collection and processing.

- j) To evaluate the capacities/ capabilities of existing shareholders and infrastructure for reuse, recycle and disposal of e-waste.
- k) To prepare DPR assessing all electronic and electrical waste items both in Delhi and neighbouring regions required for economic feasibility of eco-park.
- l) To prepare a technical and financial pre-feasibility study for development of E-Waste Eco-park.
- m) To evaluate various technologies and best practices followed as per applicable Rules for development of E-Waste Eco-park.
- n) To recommend on the scale and number of E-Waste Eco-park(s) to be developed.
- o) To complete designing of the E-Waste Eco-park including equipment detailing and quantity of machinery required.
- p) To carry out preliminary financial analysis and explore various alternate revenue modelling, identify viable PPP model for development and management of E-Waste Eco-park;
- q) To develop a suitable implementation structure and to help in bid process management, marketing consultancy and transaction advisory
- r) To develop a detailed RFP (Request for Proposal) document for selection of Private Party / concessionaire ‘for development of E-Waste Eco-Park
- s) To assist DSIIDC in the selection of Private Party/concessionaire including bid process management, marketing consultancy and transaction advisory.
- t) To supervise during development of E-Waste Eco-Park till O&M starts.

#### 6.4 Phase-wise Work Plan

The deliverables have been divided in three phases:

Phases	Activity	Details
Phase I	Detailed Project Report	The objective of this task is to assess the present situation of e-waste in Delhi, the infrastructure such as collection equipments, transportation vehicles, recycling facilities and resources such as land and manpower available. The PMC & PMU will also do a careful

		analysis of the risk associated with the project and prepare the related mitigation plan to address each type of risk.
Phase II	Procurement of private player	The objective of this phase is to develop appropriate bidding strategy & options prepare bidding documents, carryout bid processing and successfully close the bid.
Phase III	Construction Supervision	Project Monitoring of all works.