Ministry of Electronics
& Information Technology
Government of India

Project Report: Electronics Waste Awareness course of Students

Submitted By: Strategos Advisory Pvt. Limited

General

Growth in the IT and communication sectors has enhanced the usage of the electronic equipment exponentially. Faster upgradation of electronic product is forcing consumers to discard old electronic products very quickly, which, in turn, adds to e-waste to the solid waste stream. The growing problem of e-waste calls for greater emphasis on recycling e-waste and better e-waste management. Electronic waste or e-waste is generated when electronic and electrical equipment become unfit for their originally intended use or have crossed the expiry date. Computers, servers, mainframes, monitors, compact discs (CDs), printers, scanners, copiers, calculators, fax machines, battery cells, cellular phones, transceivers, TVs, iPods, medical apparatus, washing machines, refrigerators, and air conditioners are examples of e-waste (when unfit for use). These electronic equipments get fast replaced with newer models due to the rapid technology advancements and production of newer electronic equipment. This has led to an exponential increase in e-waste generation. People tend to switch over to the newer models and the life of products has also decreased.

E-waste typically consists of metals, plastics, cathode ray tubes (CRTs), printed circuit boards, cables, and so on. Valuable metals such as copper, silver, gold, and platinum could be recovered from e-wastes, if they are scientifically processed. The presence of toxic substances such as liquid crystal, lithium, mercury, nickel, polychlorinated biphenyls (PCBs), selenium, arsenic, barium, brominated flame retardants, cadmium, chrome, cobalt, copper, and lead, makes it very hazardous, if e-waste is dismantled and processed in a crude manner with rudimentary techniques. E-waste poses a huge risk to humans, animals, and the environment. The presence of heavy metals and highly toxic substances such as mercury, lead, beryllium, and cadmium pose a significant threat to the environment even in minute quantities.

Consumers are the key to better management of e-waste. Initiatives such as Extended Producer Responsibility (EPR); Design for Environment (DfE); Reduce, Reuse, Recycle (3Rs), technology platform for linking the market facilitating a circular economy aim to encourage consumers to correctly dispose their e-waste, with increased reuse and recycling rates, and adopt sustainable consumer habits. In developed countries, e-waste management is given high priority, while in developing countries it is exacerbated by completely adopting or replicating the e-waste management of developed countries and several related problems including, lack of investment and technically skilled human resources. In addition, there is lack

of infrastructure and absence of appropriate legislations specifically dealing with e-waste. Also, there is inadequate description of the roles and responsibilities of stakeholders and institutions involved in e-waste management, etc. In 2016, the Ministry of Environment, Forest and Climate Change (MoEFCC) released the updated E-waste (Management) Rules, which came in supersession of the E-waste in India (GOI, 2016).

Scope of the Project:

MeitY is the Lead Ministry on Electronics and the it is taking all initiatives necessary to align action on tackling the problem of e-waste in India. As part of its initiatives, the ministry has also undertaken various measures to spread awareness around the issue of e-waste in India. The ministry mandated MAIT to prepare an e-waste awareness course for Students of 7th to 9th Standard. The course was a primary means of spreading knowledge and awareness about e-waste and MAIT was selected as the Lead implementation partner for this initiative.

The coordination for course design and delivery for this project was carried out by MAIT with MeitY and the Central Institute for Education Technology. Central Institute of Educational Technology (CIET) is a constituent unit of the National Council of Educational Research and Training (NCERT), an autonomous organization under the Ministry of Education (MoE), Government of India. Established in 1984 with the merger of the Center of Educational Technology (1973) and Department of Teaching Aids (1959), its chief aim is to promote Educational Technology especially mass media singly or in combinations (multimedia packages) to extend educational opportunities and improve quality of educational processes at the school level. As a premier institute of Educational Technology at the National level, major functions of the CIET-NCERT are based on Research and Development, Training, Extension and Dissemination.

Deliverables of MAIT for the Project

As the implementation partner, MAIT carried out the following functions:

- Scoping of work in Achieving each of the Objectives
- Drawing up Partner Qualfications
- Coordination of execution with Partners.
- Project updates & timely completion of the project.

- Preparation of Final Project report on which MAIT can sign off from GOI.

In order to deliver the project, MAIT hired a consultant, Strategos Advisory Pvt Limited and signed an MoU with them on 13th September 2018. The key deliverables that were laid out for project delivery are listed below:

- Design the course content in terms of subject matter.
- Design delivery material and class room aids.
- Implement the Training of Trainers program for various Stakeholders i.e.
    - Schools & Colleges
    - Bulk Consumer & RWA
    - Informal Sector& Refurbishes and to create Green E champions at the city Level.
- Upload the material on Diksha Portal.
- Provide support for a period of six months for running the course.
- Launch the course by March 2021.
- Submit a report to MAIT for the activities conducted & final closure of the project.

Project Timelines

Timelines for completing this project was **4 months initially** as agreed between both the parties and were further extended subsequently by mutual consent.

Financials

The cost of the final project deliverables as agreed to in the **purchase order dated 30th July 2018** for the contracted services **was Rs. 4,50,000 (INR Four Lakhs Fifty Thousand Only).**

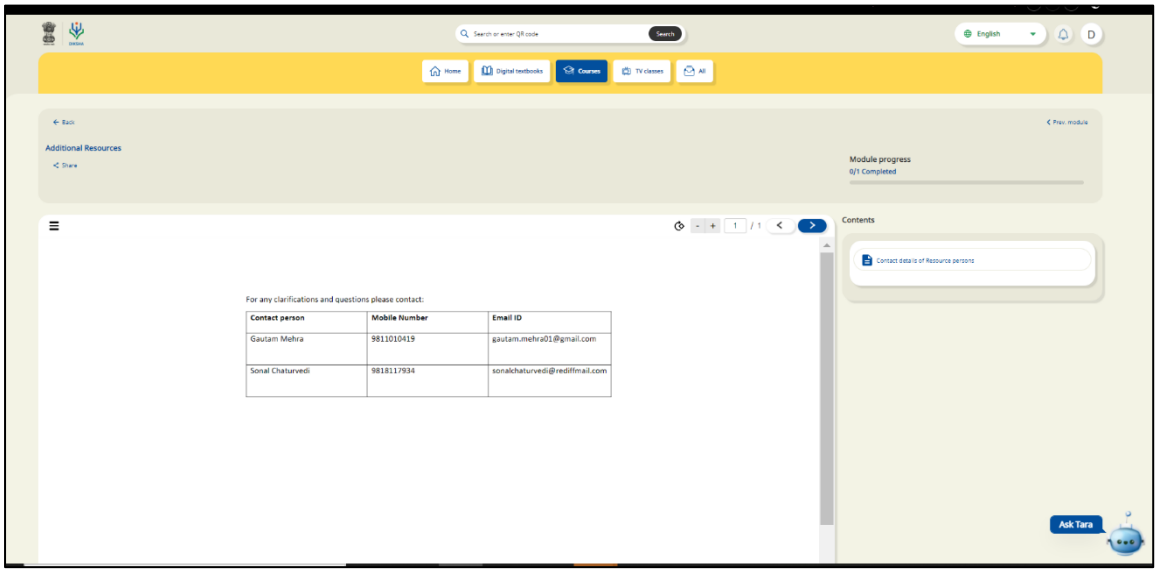
Project Outcome:

The Project was a resounding success. Its design and development were completed in time and it was titled as Course on 'Environmental Hazards of Electronic Waste (e-waste)'. The Course was uploaded on the Diksha Portal of Govt of India and commenced registration from the month of March 2021. A total of 1,05,320 (One Lakh Five Thousand Three Hundred Twenty) aspirants enrolled for the course and a whopping 56,765 (Fifty-Six Thousand Seven

Hundred Sixty-Five) aspirants completed the course successfully and were awarded a certificate.

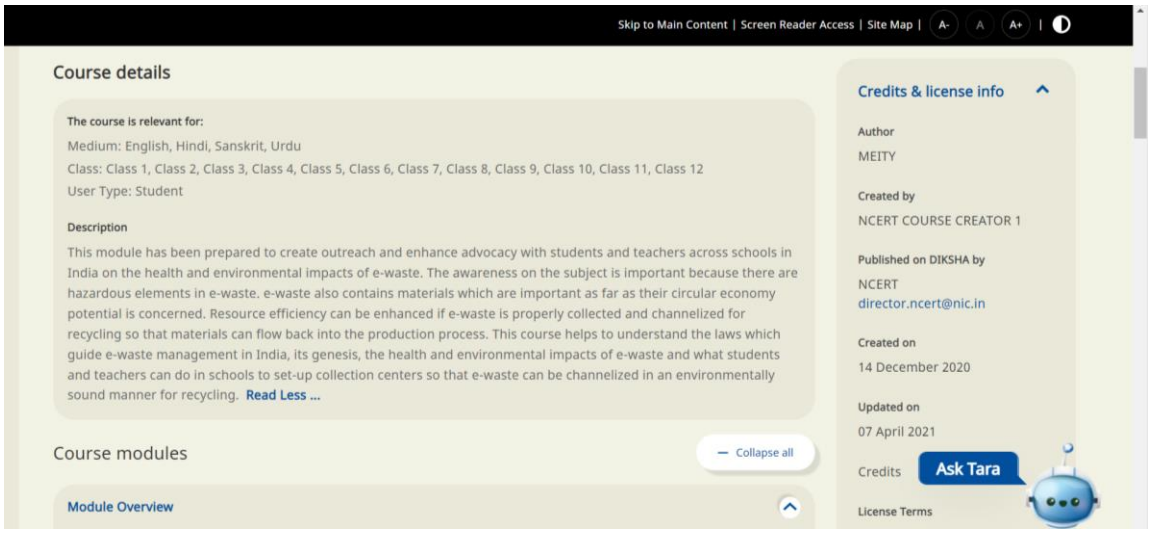
Course Support by Vendor

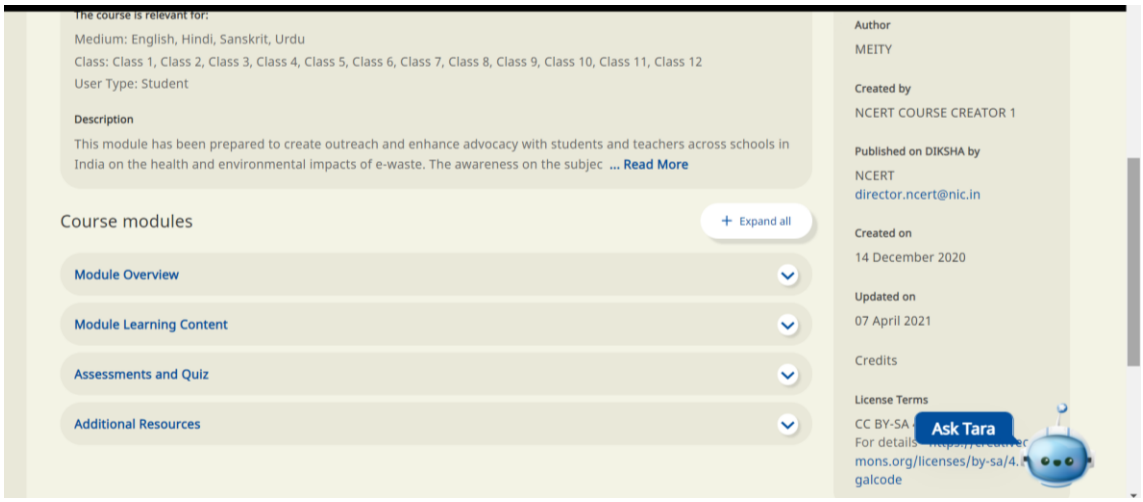
Strategos Advisory Pvt. Limited continued to provide tactical support for the course and their contact details were displayed on the Diksha portal where the course was hosted. A screenshot of the same is given below:

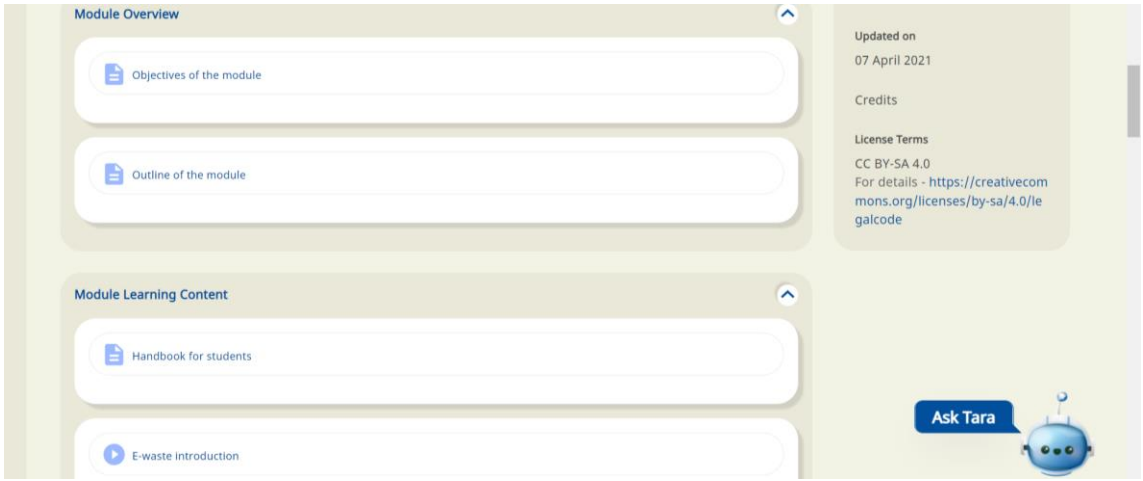


Screenshot of the Course as on Diksha Portal with contact details of Representative from Strategos Advisory Pvt. Limited#

#The course snapshot as appearing on the Deeksha Portal is attached separately in the following pages:



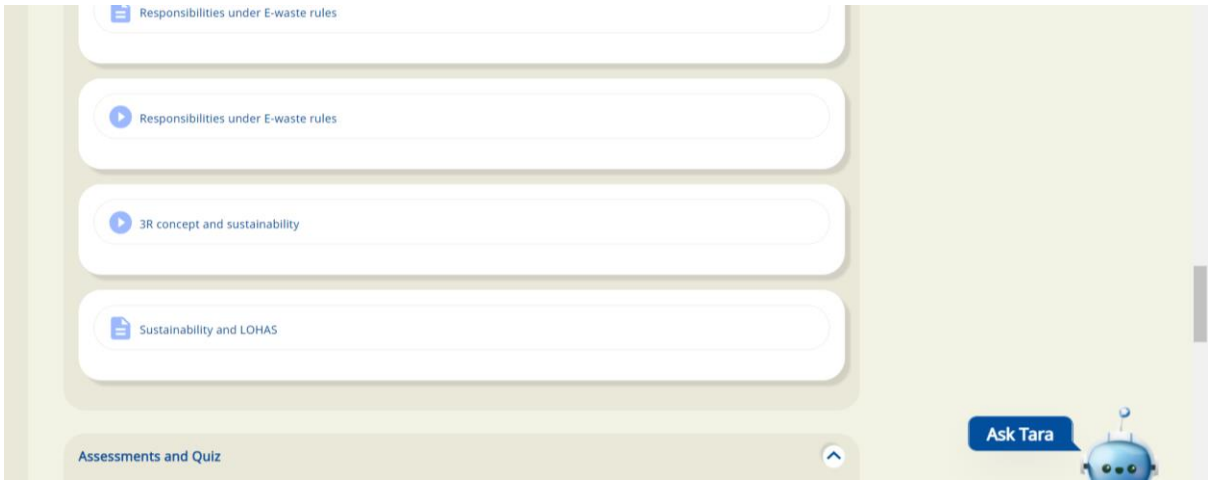

The course is relevant for:
Medium: English, Hindi, Sanskrit, Urdu
Class: Class 1, Class 2, Class 3, Class 4, Class 5, Class 6, Class 7, Class 8, Class 9, Class 10, Class 11, Class 12
User Type: Student
Description
This module has been prepared to create outreach and enhance advocacy with students and teachers across schools in India on the health and environmental impacts of e-waste. The awareness on the subjec ... Read More
Course modules
+ Expand all
Module Overview
Module Learning Content
Assessments and Quiz
Additional Resources
Author
MEITY
Created by
NCERT COURSE CREATOR 1
Published on DIKSHA by
NCERT
director.ncert@nic.in
Created on
14 December 2020
Updated on
07 April 2021
Credits
License Terms
Ask Tara


Module Overview
Objectives of the module
Outline of the module
Module Learning Content
Handbook for students
E-waste introduction
Updated on
07 April 2021
Credits
License Terms
CC BY-SA 4.0
For details - https://creativecommons.org/licenses/by-sa/4.0/legalcode
Ask Tara


Module Learning Content
Handbook for students
E-waste introduction
What is e-waste
E-waste constituents
E-waste constituents
Ask Tara


E-waste constituents
Effects of e-waste
E-waste hazards
E-waste hazards
Ask Tara


E-waste rules
E-waste rules
Responsibilities under E-waste rules
Responsibilities under E-waste rules
Ask Tara


Responsibilities under E-waste rules
Responsibilities under E-waste rules
3R concept and sustainability
Sustainability and LOHAS
Assessments and Quiz
Ask Tara

Conclusion

The course was one of its kind and received an excellent response. The material was relevant and the fact that more than 50,000 aspirants successfully completed the course demonstrates its popularity and relevance. As feedback from participants who registered for the course, requests for its availability in regional languages of India was prominently articulated by a majority of aspirants. It is therefore recommended that the translation of the content may be undertaken as a separate project.

----------**End of Report**----------