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NETWORK FACILITY

IMPACT SHEET • SWITCH-ASIA PROJECT

ESTABLISHING E-WASTE CHANNELS TO ENHANCE ENVIRONMENT FRIENDLY RECYCLING (WEEE RECYCLE)

Creating green jobs through safer and cleaner e-waste recycling practice in India

Nine companies, representing more than 1 000 business units, adopted health and safety norms and environmental standards related to e-waste

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The Challenge

High demand for electronic products makes e-waste the fastest growing category in the solid-waste stream and is thereby provoking major disposal challenges. Annually around 800 000 tonnes of e-waste is generated in India, 95% of which enters the informal channels of backyard, home and cottage industry recyclers. When informal workers handle e-waste in an unscientific manner, it is often harmful to both themselves and to the environment. Emissions from the treated materials, unhealthy conditions in the dismantling and smelting units, makeshift facilities not meeting occupational health and safety standards, and unsorted e-waste being openly dumped, were all common practices addressed by the *WEEE Recycle* project.

Objective

The project formalised and mainstreamed e-waste management, raised awareness of and the potential for new technologies; and urged changes to be based on sustainability and business principles.

The specific objectives were:

- To support the implementation of the National Environment Policy encompassing the 3Rs and 'polluter pays' principle, with a clear role for the involvement of the informal sector in waste management;
- To reduce pollution from recycling e-waste in the informal sector in four urban areas, by encouraging environmentally sound recycling through the collective effort of all relevant stakeholders in the value chain;
- To involve informal sector SMEs in the e-waste channel and to streamline these activities;
- To develop and improve the technology for e-waste management and recycling in both informal and formal sectors.

Activities / Strategy

Establishing Associations

The project partners in four cities of Delhi (NCR), Bangalore, Kolkata and Pune established contacts with informal recycling groups to create relationships based on trust and confidence. These groups formed associations, which registered as private limited companies / cooperatives / societies or self-help groups. They were then put in contact with formal recycling units to sign contracts for channelisation of the collected e-waste, and with bulk generators giving them access to WEEE.

Establishing E-waste Collection Channels

Strategic locations had e-waste collection bins installed for individual and bulk generators. A collection mechanism was established, by enhancing awareness of individual consumers and engagement with the manufacturers.

Capacity Building

Through training workshops, awareness raising and technology transfer, both informal and formal e-waste recyclers were reached. Train-the-trainer workshops included basic, advanced and refresher courses. To support the implementation of the E-waste Management and Handling Rules (2011), the 'E-waste policymakers' training course' was offered to regulators. This training course was organised jointly with Centre for Science and Environment (CSE), under their existing programmes with MoEF for capacity building of the regulators, with training materials in print and online.

Research and Development Activities

R&D focussed on carbon footprinting the e-waste recycling process, as well as the potential for green electronics and a green labelling scheme.

Policy Dialogue and Dissemination Activities

The project prepared policy briefs to support policy implementation, e.g., guidelines were prepared for the effective implementation of the E-waste Management and Handling Rules (2011). Promotional material included project brochures, flyers, posters, and an annual calendar on e-waste with schoolchildren.

Scaling-up Strategy

Creating a Supportive Regulatory Framework

Having a strong policy framework creates a compelling business case for informal recyclers, and motivates consumers to take action. Systematic engagement with the Ministry of Environment and Forest (MoEF) resulted in the formulation of separate legislation for e-waste, and the E-Waste (Management and Handling) Rules were finally announced by MoEF in May 2011. The new law addresses all stakeholders, especially producers, including the roles and responsibilities of different stakeholders for the safe collection and disposal of e-waste in India. To support the e-waste rules implementation, the project also prepared e-waste guidelines. At a state level, the project engaged with the State Pollution Control Boards that are instrumental in implementing the legal obligations regarding e-waste management and handling rules. The Ministry of Consumer Affairs (MoCA) supported the project, particularly through its electronic media awareness-raising campaign. The indigenous state-of-the-art recycling technology developed by the Ministry of Communication & Information Technology (Department of Electronics and Information Technology – DEITY) for extraction of precious metals from printed circuit boards was implemented in this first phase of the project. In the second phase, which continues after the project's completion, DEITY collaborates with GIZ for channelisation of PCBs to the recycling centre, which promotes cooperation between the formalised informal sector and formal sector. This channelisation also directs the precious metal boards for safe recycling, thus enhancing the recovery efficiency and reducing the material available for acid baths, etc.

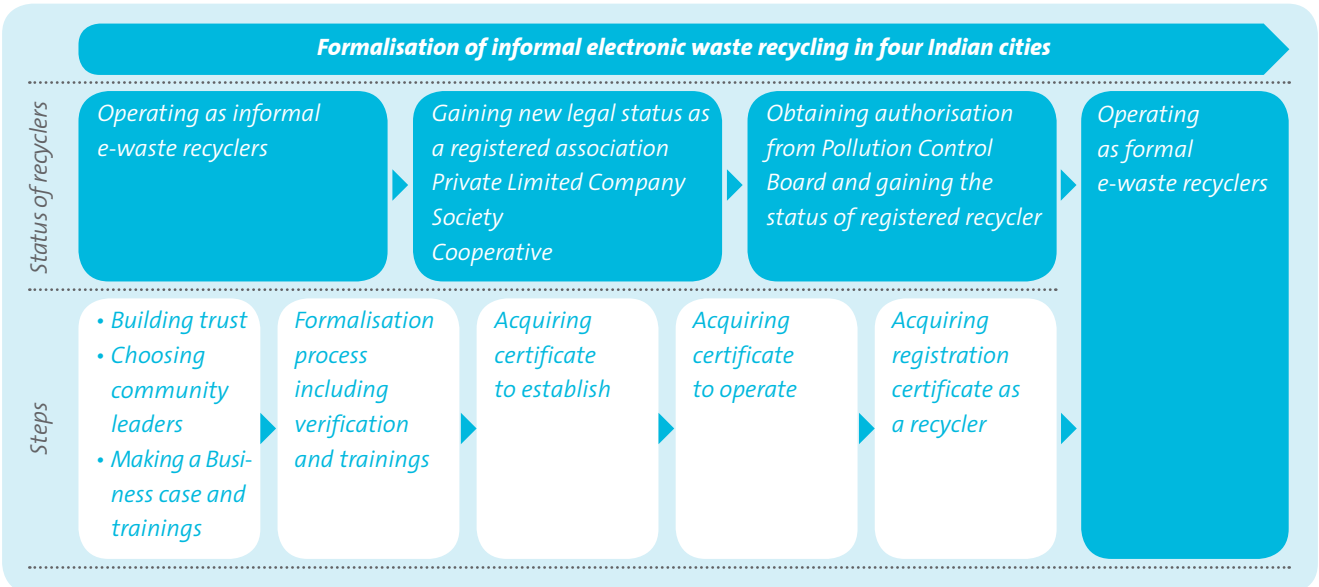
TARGET GROUPS

- Waste electrical electronic equipment (WEEE) recycling SMEs in Delhi (NCR), Bangalore, Kolkata and Pune
- Manufacturers of IT and CE equipment
- Formal sector recycling units
- Large WEEE generators including public and private enterprises, state government offices, municipal corporations, etc.
- India's Ministry of Environment and Forests (MoEF), Central Pollution Control Board and State Pollution Control Boards in Karnataka, West Bengal, Maharashtra and Delhi

Reaching Out to Stakeholders and Building Trust

An initial activity established local project implementation units (PIU) in each of the four cities to ensure the cooperation of local stakeholders. This created ownership, enhanced capacity among local partners and allowed the project to address city-specific issues. It also led to the formation of city-level consortia comprising of representatives of state authorities, industry and civil society organisations. Action plans for each city laid out environmentally sound e-waste channelisation mechanisms.

Formalisation process for informal e-waste recyclers adopted in the WEEE Recycle project in India



Results

Establishment of Informal Sector Associations

Two new companies and an NGO in New Delhi were supported to register with the authorities. This encouraged informal sector workers to replicate the model, resulting in the establishment of 20 formalised e-waste collection centres in Delhi. In Bangalore, the project worked with various formalised companies and workers as collection centres and dismantlers. In Pune, the SWaCH union of waste-pickers formalised 192 informal SMEs, adding to its growing network. In Kolkata, five recycling associations were successfully formalised.

Establishing an E-waste Collection Mechanism

The project established links with various e-waste generators. The Manufacturers Association for Information Technology (MAIT) worked closely with large brands on their take-back infrastructures. Workshops with public institutions highlighted the responsibilities of bulk consumers. E-waste bins were placed in public locations. An awareness and take-back programme, with support from Nokia, linked 210 schools across Delhi with formalised associations for regular e-waste collection.

Capacity Building

Capacity building modules were developed for the four project cities to help various stakeholders set up the e-waste collection channels. For wider dissemination, a "Train the Trainers" approach involved the PIU members, NGOs and other stakeholders, with topics covering toxic substances in e-waste, health and safety, waste segregation, association building, business development or legal aspects for compliance to the e-waste rules, etc. More than 600 informal sector SMEs were trained in 2012.

> ***Working in accordance with the set regulations on e-waste, we were supported to mainstream and formalise our informal sector. A collection centre was opened and huge support was provided in e-waste channelisation. Partnering with a German investor, now the company has been registered to start a dismantling facility in the State of Haryana. This tying-up of formalised SME with investor can be seen as a positive sign in terms of increasing acceptance of such 'ex-informal' SMEs. The investors are willing to put in money due to their expertise and wide network.***
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> *Mohd. Sabir, Director, Green E-waste Recyclers Pvt. Ltd. (New Delhi)*

> ***The new e-waste management and handling rules that guide producers of electrical and electronic equipment and mainstream the informal sector into an environmentally, socially and economically feasible e-waste management system, is an eminent example of voluntary action by producers and formal recyclers alike. However, much more needs to be done. With rising awareness about the hazards of improper e-waste management, initiatives on e-waste management by companies enhance brand recall and value, and contributes to competitiveness. The WEEE Recycle project has created models for the private sector and city governments.***
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> *Ashish Chaturvedi,*
> *Project Manager, GIZ-ASEM*

Research and Development Reports

As part of this component several reports were prepared. A carbon footprint of e-waste recycling report, a policy report proposing strategy for the re-launch of the Ecomark scheme, and a guiding document on green electronics were key project publications. A research paper on e-waste management policies in India was published in the Journal of Social and Policy Studies. Reporting on the project's approach to e-waste recycling, adelphi together with GIZ published a bilingual German/English article in the industry magazine, Recovery International. The project also contributed a technical paper on urban management about the predicted rise of e-waste consumption in cities, in a book published by the National Institute for Urban Affairs (NIUA).

Policy Dialogues and Dissemination

The project supported the draft of the E-waste Management and Handling Rules 2011 and its implementation guidelines, and representatives served as committee members of different governmental departments. The project was presented in various national workshops, at World Environment Week, published in both national and international media, and showcased at the Rio+ conference in June 2012 through a film developed by the EU. For wider outreach to individual consumers on safe e-waste disposal, the project team partnered with the media houses (Nav Bharat Times, a Hindi newspaper), electronic retail stores (e.g. CROMA) and supermarket chains (e.g. MORE).

Impact in Numbers

Economic Impact

- 9 companies/associations representing more than 1 000 informal business units were formalised thereby creating green jobs.

Environmental Impact

- There are no more open burnings or acid baths by the formalised SMEs. Previously, only 50% reduction of acid baths or open burning by informal e-waste SMEs in Delhi and Bangalore could be achieved.
- Government departments in Delhi and Bangalore now dispose their e-waste only to formal recyclers.
- Government research institutions continue to engage the workers of formalised SMEs for efficient extraction of precious metals.

Social Impact

- In Pune, the union of e-waste pickers with more than 7 000 members collecting waste from 200 000 households has been formalised and authorised by the State Pollution Control Boards.
- Marginalised populations and minorities were mainstreamed into formally recognised e-waste channels thus reducing unsafe recycling activities.
- Health and safety of e-waste workers were improved through training on Occupational Health and Safety (OHS).

Climate Benefits

- Transfer of e-waste to formalised recycling facilities helps improve resource efficiency and reduce CO_2 emissions by preventing toxic waste going into landfills.

Green Finance

- Seven SMEs benefitted from better access to finance through project activities.
- A new dismantling facility in Haryana was established, involving Green E-waste Recyclers Ltd. and a German investor.

Target group Engagement

- A total of 270 SMEs engaged in project activities of which 21 were based in Delhi, 192 in Pune, 6 in Kolkata, 51 in Bangalore.
- About 100 outreach activities (e.g. technical training sessions, workshops, field visits and awareness programmes) were organised. More than 600 people were reached and trained.
- Various actors in the e-waste value chain such were engaged, i.e. Department of Environment, municipal corporations, media, NGOs, producers, Manufacturing Associations for Information Technology (MAIT), bulk consumers, academic & research institutes, Resident Welfare Associations (RWA), and e-waste recyclers.

Policy Development

- Training for 14 State Pollution Control Boards (SPCBs) was conducted and regular consultation with three national ministries and four states were sought to improve e-waste policy implementation.
- E-waste rules were issued by the Ministry of Environment and Forest (MoEF) in May 2011. The project helped prepare its implementation guidelines.
- Consultations with MAIT to set up Producer Responsible Organisation (PRO) to support the implementation of Extended Producer Responsibility (EPR).
- Policy brief on fiscal instruments to support the EPR implementation was developed and submitted to MoEF.
- Official support was received from Pune and Bangalore municipalities for the e-waste collection network after it was successfully showcased.

Legend

Eligible countries where SWITCH-Asia projects are implemented

Eligible Asian countries for the SWITCH-Asia programme

Non-eligible Asian countries for the SWITCH-Asia Programme

Project implementation area

City *Region* *Country*

The boundaries shown on this map do not imply on the part of the European Union any judgment on the legal status of any territory or the endorsement or acceptance of such boundaries.

OBJECTIVES

The project aimed to work with all sectors, but particularly the informal sector, to formalise and mainstream e-waste management in line with recent policy and regulations; to raise awareness of and the potential for new technologies; and for changes to be based on sustainability and business principles wherever possible

DURATION

PROJECT TOTAL BUDGET

EUR 2 004 045.37
(EU contribution: 80%)

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