

Sustainable S&T Solid Waste Management Roadmap

Possible Solutions

Vision

A circular economy with solid waste pollution-free environment

2027-2028

Overall Strategies:

Human Resource:

- Upgrading of capacities/capabilities of institutions for sustainable solid waste management

R&D Technologies:

- Development of alternative materials to plastic-based packaging and products under Non-Environmentally Accepted Products (NEAP) & Packaging (e.g., plastic stirrers/coffee cups)
- Development of Technologies for Upcycling/ Recycling of plastics/Co-processing
- Development of appropriate technologies for the detection, measurement and treatment of microplastics and other marine litter

- Conduct of Life Cycle Analysis (LCA) of single-use plastics with technological interventions

- Establishment of a facility for biodegradability testing of plastics

S&T Policies:

- Establishment of comprehensive resource recovery plan for plastic wastes & guidelines on final disposal
- Enhancement of industry compliance on solid waste management

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- Development of alternative materials to plastic-based packaging and products
- Resource recovery plan for the plastic generated (infectious wastes/healthcare materials)
- Baseline data gathering and assessment of plastic Wastes
- Development of Application and Database (IWASTO)
- Policy recommendation for Taal Ash
- Volume reduction and pre-treatment of COVID mixed wastes
- Product EOL Plan Imposition
- Implementation of Segregation
- Identification and valuation of recyclable waste
- Identification and valuation of recycled products.

2022-2023

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- Development of Technologies for Upcycling/ Recycling of plastics/Co-processing
- Development for alternatives for POP's
- Development of Microplastic capturing & treatment Technology
- Establishment of Biodegradability Testing Facility
- Social and economic studies for the development & upgrading of recycling industry
- Environment Psychology approach to address the social aspect of Solid Wastes Management
- Commercialization/tech transfer of developed technology

2024

Technologies

- Technologies for Upcycling/ Recycling of plastics/Co-processing
- Technologies for the detection, measurement and treatment of microplastics and other marine litter
- Tech transfer of developed technologies

Facilities

- Establishment of a facility for biodegradability testing of plastics

Policy

- Socio economic impact for recycling Industry

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- Value-addition innovation on Wastes from Electrical & Electronic products (WEE)
- Deployment of Clean Technologies for solid waste prevention and control for ship recycling
- Establishment of Recyclability Testing Facility
- Development of standards for microplastic
- Capacity Building of researchers
- Study on recycling industry in the Philippine setting
- Funding and promotion for compliance to establish a sanitary landfill for lower class LGUs

2025

2026

Milestones

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- Formulation of Guidelines /policies/ standards from results of R&D
- Development of Clean Technologies for solid waste management
- Development of green alternatives to plastic products
- Development of tech, expertise for the recovery of high-value materials
- Development of treatment technologies for POPs
- WEE (Electronic Waste recovery and reuse)

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- Development of Clean Technologies for solid waste management
- Development of standards for nanoplastics
- Development of green alternatives to plastic products
- Development of tech, expertise for the recovery of high-value materials
- Grow pool of 3rd party Hazardous/Special Waste Treater.
- Commercialization/tech transfer of developed technology
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- Identification / Development Environment friendly alternatives.
- Designing of packaging material.

Technologies:

- Treatment tech for POPs, Mercury, Arsenic and other Heavy Metals
- Development of technology on giving added value on e-waste

Policy Review

- Input in the formulation of guidelines/ policies and standards on prevention and control of solid waste

Technology

- Develop on-site treatment technology.

Policy Review

- Enhanced industry compliance to solid waste mgt policies/regulations

Capacity Building

- Reduction and minimization of solid waste generation

Overall Outcomes

Human Resource

- PhD, MS and BS students graduated
- Established pool of experts
- Trained personnel/stakeholders

R&D Technologies

- Innovative solutions to solid waste
- Commercialized technologies

Facilities / Services

- Established centers / biodegradability testing facility

S&T Policies

- Inputs to policies and updating of the Ecological Solid Waste Management Act (RA 9003)
- Inputs to the House Bill drafted on Single-use Plastics

Legend
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