

IMPLEMENTATION OF 3Rs IN THE PHILIPPINES

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DENR

CURRENT SITUATION OF 3R ACTIVITIES IN THE PHILIPPINES

RECYCLING RATES

Metro Manila (Philippines)

1997 – 6%

2000 -- 13%

2003 – 25%

- ✓ ***During this period, the Federation of Multipurpose Cooperatives in Metro Manila (an association of junk dealers) has tripled its trade of recyclable goods from 69,400 MT to 209,770 MT, with value increase from PhpP95 Million to Php268 Million. Recovery Rate through secondary sorting prior to final disposal is 25-30% at the Rodriguez, Rizal CDF.***
- ✓ ***Nationwide Recycling Rates are also increasing with better LGU compliances with Republic Act No. 9003.***

NATIONAL LEGISLATION ON THE 3RS

Republic Act No. 9003, “The Ecological Solid Waste Management Act”

1. Sets the mandatory waste diversion goal of at least **25%** by 2006 and progressively increasing every 3 years thereafter.
2. Mandates Segregation-at-Source and Segregated Collection of Household Waste
3. Mandates the establishment of Materials Recovery Facilities/Systems and drop-off and buy-back centers for compostable recyclable and special household wastes.

NATIONAL LEGISLATION ON THE 3RS

Republic Act No. 9003

4. Mandates the Eco-Labeling eventual prohibition of Non-Environmentally Acceptable (NEA) Products and Packaging Materials
5. Mandates all government personnel to increase acquisition of environmentally preferable products and services to the extent feasible consistent with price performance, availability and safety considerations.

President Gloria Macapagal-Arroyo issued Executive Order No. 301 to establish and implement a Green Procurement Program for the entire Philippine Government

NATIONAL LEGISLATION ON THE 3Rs

Republic Act No. 6969 “The Toxic, Hazardous, and Nuclear Waste Control Act

- ✓ ***Encourages proper management of hazardous wastes generated within the country by promoting, in order of preference:***
 - a. ***Minimization of hazardous waste generation;***
 - b. ***Recycling/Reuse of hazardous waste;***
 - c. ***Treatment of hazardous waste to render it harmless;***
 - d. ***Landfilling of inert residual hazardous waste***

NATIONAL LEGISLATION ON THE 3Rs

DAO 94-28 (Interim Guidelines for the Importation of Recyclable Materials Containing Hazardous Substances)

Hazardous substances which are allowed for importation:

scrap metals

solid plastic materials

electronic assemblies and scrap

used oil

used lead-acid batteries

fly ash

Hazardous wastes may be exported for treatment/disposal only to Basel Convention countries.

ACTIVITIES FOR THE PROMOTION OF THE 3R'S

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1. Establishment of Materials Recovery Systems & Nationwide Search for Model MRFs. *As of December 2005, 1103 MRFs serving 1314 barangays have been established nationwide*
2. Industrial Waste Exchange Program (IWEP)
3. Green Procurement Program in all Government Agencies (E.O.31)
4. Eco-labeling Program, *with existing guidelines on the ff: Synthetic Laundry Detergents, Tissue Paper Products, Zinc Carbon & Zinc Alkaline Manganese Dioxide Batteries, Polyethylene and Polypropylene Packaging Materials, Automotive Engine Oil, Printing and Writing Paper*

ACTIVITIES FOR THE PROMOTION OF THE 3R'S

5. Implementation of ISO 14001 “Environmental Management System” (in government agencies and business establishments). *In Metro Manila, 160 buildings employ EMS Systems waste segregation with 6 buildings doing their own composting. An average of 34,600kg of recyclables is recovered every month*
6. Holding of annual Recyclables Collection Event by NGOs and business during Earth Day Celebration
7. Enacted an Ordinance Banning the Use of Plastic in Department Stores
8. Industrial Eco-parks
9. Solid Waste Reduction Master Plan (SWARMPlan)

ACTIVITIES FOR THE PROMOTION OF THE 3R's

10. Polystyrene Packaging Council of the Philippines set up recycling plants and recovered 8000 cu.m in 2003
11. Coca Cola Bottlers Phils. Inc. recovered non-returnable but recyclable soda containers. 4.1 million aluminum cans and 3 Million PET containers have thus far been recovered.
12. San Miguel Corporation Recovers PET Bottles from public schools in Metro Manila
13. The draft guidelines *on Extended Producer Responsibility (EPR)* are presently on sectoral consultation prior to adoption.

ACTIVITIES FOR THE PROMOTION OF THE 3R'S

BANTAY

BATERYA

BALIK BATERYA

14. Advocacy campaign to improve the recovery and recycling of used lead-acid batteries.

300,000 batteries per year allocation. This is equivalent to 1.2 Million liters of sulfuric acid electrolyte and 3600 metric tons of lead prevented from polluting the environment.

2001	-	7 tons
2002	-	7 tons
2003	-	204 tons
2004	-	398 tons

Supporting Organizations

1. National Solid Waste Management Commission
2. DENR
3. DOST
4. BOI-DTI
5. Clean and Green Philippines
6. Green Choice Philippines
7. Philippine Business for the Environment
8. Linis Ganda
9. SWARMPlan
10. National Ecolabelling Program Board
11. Philippine Recyclers Inc.

Promotion of Science and Technology

RECYCLING OF BIODEGRADABLE WASTES



- Horizontal rotating drum reactor
- Aerated System
- Approximately 1 ton/day capacity
- Electrically-driven
- Semi-continuous operation
- Forced-air circulation
- Manual or automatic process control

RECYCLING OF BIODEGRADABLE WASTES



VERMICOMPOST

Organic fertilizer
or soil enhancer
produced from
wastes through
the action of
earthworms



RECYCLING OF BIODEGRADABLE WASTES



Bio-gas Technology

Conversion of organic wastes into energy and bio-fertilizer by anaerobic process.

RECYCLING OF BIODEGRADABLE WASTES

Cooking: An LPG modified double burner biogas stove



A hybrid 5 hp biogas run generator



Lighting: An LPG modified mantle lamp



TECHNOLOGIES FOR MANAGEMENT OF RECYCLABLES

RECYCLING OF STYROPOR

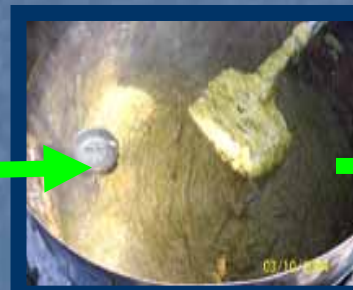


Styropor



Melting Unit

Process Flow



Melting



Table Top Mold



Molding

RECYCLING OF STYROPOR

Catwalk Tiles



Blocks



Bricks



Synthetic Planks



PRODUCT LINES

Recycling of Various Aluminum foil packaging laminates

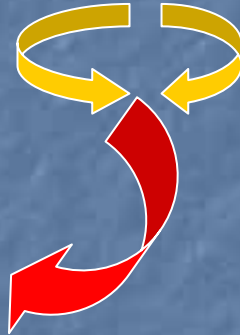


Fine Grind Milo packaging
Injection Molding

+



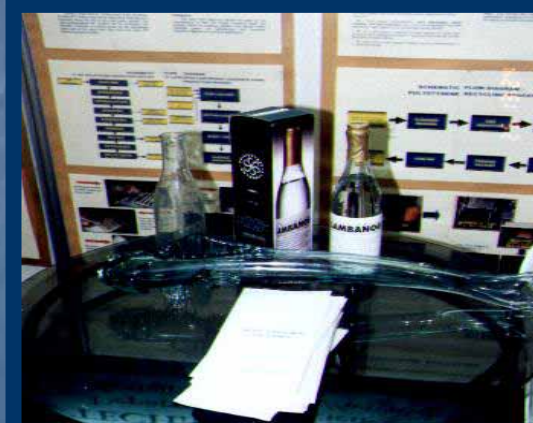
HDPE Virgin Resin pellets



Injection Molded
sample products



GLASS RECYCLING



BATTERY RECYCLING



BATTERY LIFE CYCLE

USE OF BATTERIES
BY CONSUMERS



DISCARDED
BATTERIES



PRODUCTION OF NEW
BATTERIES
FROM RECYCLED
LEAD



RECYCLING OF
BATTERIES TO
PRODUCE LEAD

Creative Recycling for DOY Packs!



**FINISHED
PRODUCTS**

TIN CAN RECYCLING



used tin cans



Pressing



Rust-removing



Finished Products



Lid-making
(can cover)

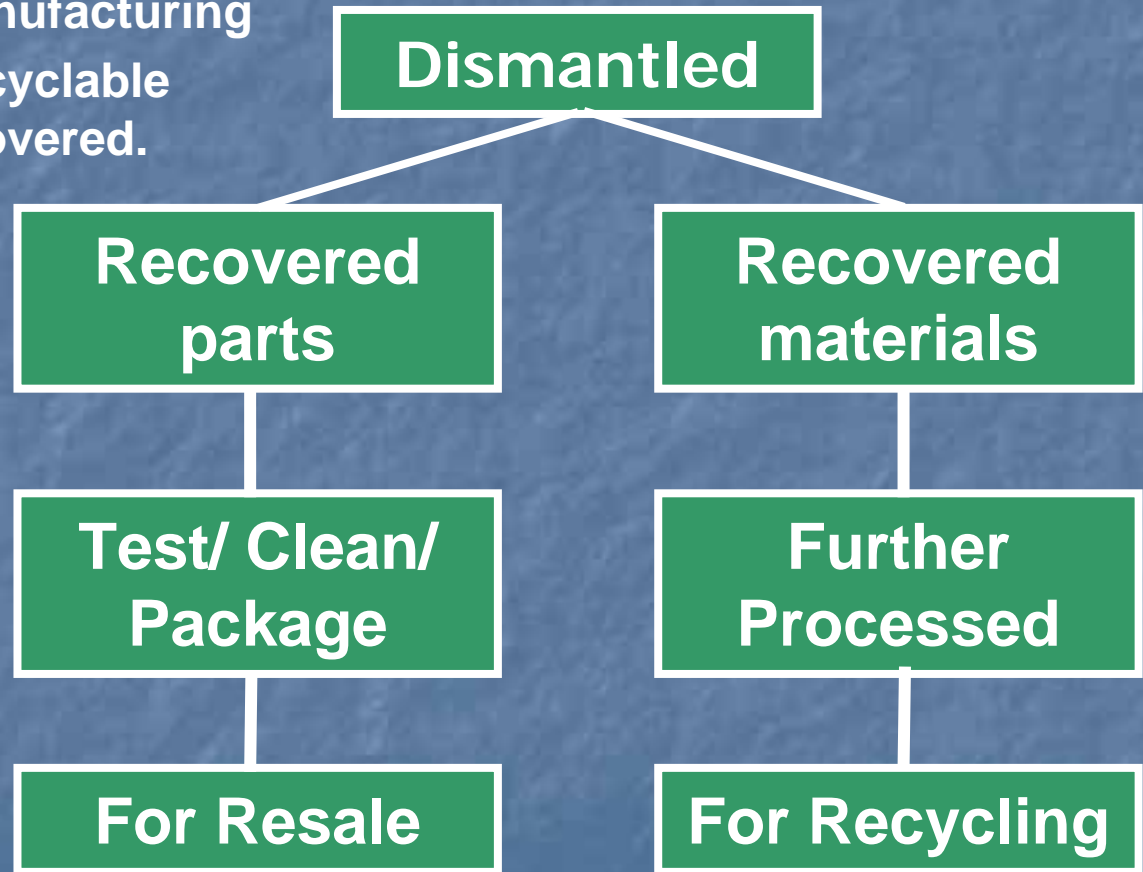


Seaming



Electronics Recycling through Demanufacturing

- Utilization of a non-destructive process called demanufacturing
- Reusable parts or recyclable materials can be recovered.



RESIDUAL WASTE RECYCLING



LOADING



CRUSHING



SCREENING



MIXING



BY PRODUCT
HOLLOW BLOCKS



PROBLEMS ON IMPLEMENTATION OF 3RS

1. Cost of Recycling Process is higher than cost of using virgin raw materials.
2. Lack of market for compost and recycled materials
3. Lack of supply of recyclable materials to be used as raw products. Some manufacturers import secondhand/waste paper and plastics
4. Lack of information
5. Lack of cooperation
6. Lack of major recyclers outside Metro Manila

**TRANSBOUNDARY MOVEMENT
OF RECYCLABLE RESOURCES
AND REMANUFACTURED
GOODS**

PROBLEMS ON TRANSBOUNDARY MOVEMENT OF RECYCLABLE RESOURCES AND REMANUFACTURED GOODS

- **Mis-declaration of waste as recyclables.**
- **Being an archipelago with 7,103 islands, smuggling of electronic and electrical waste appliances**
- **Imported Secondhand vs. locally manufactured vehicles**

PRIORITY AREAS FOR THE IMPLEMENTATION OF THE 3R INITIATIVE

PRIORITY AREAS FOR THE IMPLEMENTATION OF 3Rs INITIATIVES

- Eco-labeling and EPR
- Adoption of NEAPPM list
- Nationwide networking of formal and informal recyclers
- Fiscal and Non-Fiscal Incentives for recycling and use/promotion of recycled goods
- Lowering domestic transport costs of recycled and recyclable wastes
- Curb smuggling of E-waste and used vehicles

INTERNATIONAL COOPERATION ACTIVITIES

1. Industrial Waste Exchange Program
(Canada, US-AEP)

2. Implementation of Pilot Projects
*Community-Based Ecological Solid
Waste Management Project (UNDP,
Japan fund)*

3. Clean Development Mechanism
*Waste to energy (Methane Recovery
Project in Payatas CDF)*

Waste no more

Waste no time!

MARAMING SALAMAT PO !!!

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