**ASSAM DON BOSCO UNIVERSITY**

**WASTE MANAGEMENT POLICY**

## 1. Introduction

Scientific waste management plays an important role in the global cleanliness and environmental sustainability goal along with human health and resource conservation. Waste management is the generic term given to the whole spectrum of activities associated with waste including its generation, segregation, storage, handling and transportation from point of source to the place of disposal. Hence, planning the waste management and recycling for all kinds of waste generated in a region is an enormous task. And as a university, we feel utmost responsible to encourage the student community as well as other stakeholders to understand the importance of environmental sustainability through scientific waste management. Thus, initiation of waste management policy and strategies were undertaken in Assam Don Bosco University (ADBU).

## 2. Policy Statement

Assam Don Bosco University has created a Campus with a commitment to environmental sustainability with clarity in its adoption and consumption of clean energy, management of water sources, conservation of flora and fauna, organic waste management and productive use of land. The aim of this policy is to promote the concept of 'Zero Waste' with an objective to reduce the impact of various waste generated in the campus on environment and human health through its philosophy of 5R's- Refuse, Reduce, Reuse, Repurpose, and Recycle.

This policy applies to all waste-generating activities (as defined in the document below) undertaken by or on behalf of Assam Don Bosco University including its staff, supply chain partners and clients.

## 3. Policy Objectives

The principal objectives of the Waste Management Policy of Assam Don Bosco University are:

- To minimize the use of plastic and other hazardous articles in the University campus.
- To minimize the adverse environmental impacts of the disposal of University assets.
- To avoid the use of disposable items in the University campus.
- To increase the rate of recycling of all appropriate waste materials generated inside the campus.
- To implement sustainable resource management practices, based on 5R's principles.

- ❖ To set and achieve targets for reducing resource use.
- ❖ To measure the volume of waste generated in the campus routinely for landfill disposal and recycling.
- ❖ To apply technological measures to promote efficient and environmental-friendly waste management.

**4. Guiding Principles and Responsibilities**

***(A) Prevention and Minimization:***

ADBU will minimize solid waste generation and the potential release of pollutants into the environment first through source reduction, secondarily through reuse and recycling, and finally through treatment and disposal. The university will also minimize the generation of hazardous wastes and toxic materials. The university will maintain policies and processes for the safe and efficient use, tracking, storage and disposal of hazardous and toxic materials.

***(B) Re-use and Recycling:***

The university has given top priority to re-use the waste when it is created inside the campus. But re-use is not the practical option in large-scale waste management e.g. huge pile of plastic or plastic related materials for hygienic reasons. Then ADBU would consider the next option i.e. recycling.

***(C) Recovery and Conservation of Energy:***

ADBU will reduce resource consumption by eliminating wasteful practices and promoting efficient use, and by evaluating and implementing feasible and practical conservation measures in existing buildings, renovations, and new construction.

***(D) Environmental-friendly Disposal:***

The university would dispose all potential waste created inside the campus for which the re-use and recycling options are not possible.

***(D) Environmentally-responsible Outsourcing and Acquisition:***

ADBU will promote environmental responsibility through its contracting and purchasing choices. When purchasing products and services, the institute will strive to obtain the best value by considering life cycle environmental impacts along with cost and functional performance.

***(E) Environmental Awareness:***

The university will provide ongoing education for all employees, contractors and visitors concerning the importance of environmental responsibility in all institute operations. Further, the institute will share relevant and accurate information on its environmental performance with the public.

## 5. Management and Organization

- The Board of Management of the University shall constitute a committee for the effective implementation of this policy.
- The Committee will be constituted of 4 or more members to be nominated from the Faculty and Staff of the University and one person who is familiar with the issue of waste management.
- The committee members shall be appointed for a term of three years.

## 6. Action Plan and Strategies of Disposal

Following are the key actions undertaken for waste management in the university.

- **Collection and Segregation of Waste:** The segregation of waste is the key strategy for waste management. The university uses dedicated space for segregation, storage, re-use, recycling and disposal of all kind of waste. For example, various types of bins and dumpsters are provided throughout the campus to segregate waste.
- **Domestic and Kitchen Waste:** The domestic and kitchen waste is collected from all the hostels, biodegradable materials shredded and mixed with cow dung and fed to a widely used earthworm species known as Eisenia fetida in a tank (a bio-compost peat prepared in the university campus). Grass cut from the lawns is also fed into the tanks to produce vermicompost (i.e. organic manure or fertilizers). Then the vermicompost produced from the bio waste of the university campus is utilized for agricultural use inside the university campus especially in the entire tea plantation of 120 acres on the campus.
- **Leftover Food:** Kitchen waste is collected by the canteen staff and is taken away to feed pigs in a nearby pig farm.
- **Disposal in Landfill:** The University maintains a landfill in the campus for various solid non-hazardous wastes which are not suitable for either vermicompost preparation or incineration. Those wastes are dumped in the landfill in a systemic manner.
- **Disposal of Waste through Incineration:** Any non-biodegradable solid waste which can't be used to produce organic manure like white paper, mixed office papers, cardboard, bio-medical waste, etc. are efficiently converted into ash in a magnetic high-temperature smokeless incinerator installed in the campus.
- **Disposal of Plastic Waste and other disposable items:** Plastic and other disposable items are collected from the campus and sold to an agency that re-cycles it.
- **Liquid Waste Management:** Waste water from wash-basins is channeled into drains and then into small streams. Flowing down the drains and streams water is naturally oxygenated and purified. The waste from the canteens and other areas are channeled into a reservoir for biological treatment using Magur fish (a species of cat fish), acting as

scavengers, before the water goes out into water bodies.

- **Hazardous Chemical and Biomedical Waste Management:** Chemicals flowing out through the drains of the laboratories are made to pass successively through a waste management system of the university that consists of Chamber-I (Gravel), Chamber-II (Sand) and Chamber-III (Charcoal). The water flowing out from Chamber-III is free from hazardous chemicals and is lead to a soak pit. The three chambers are replenished with new materials after a period of six months. The solvents used in the laboratories are reused after distillation to minimize the use of solvents. The waste solvents are separated as halogenated and non-halogenated in plastic containers. To prevent heat generation and gas evolution or other reaction, compatibility of the waste is checked carefully. Halogenated and non-halogenated solvents are stored separately in designated plastic dumpsters. After the dumpsters are full, the State Pollution Board is contacted for collection and destruction.
- **Electronic and Universal Waste Management:** Segregation is the first step for disposal of e-waste. All kinds of electronic wastes (e-waste) and universal waste are collected and segregated in a separate bin for transferring to Karo Sambhav. Our university is collaborating with Karo Sambhav, an e-waste Producer Responsibility Organisation (PRO). Karo Sambhav, on invitation by our University makes presentations to the university community, for creating awareness for managing e-waste. Karo Sambhav removes all e-waste from our campuses on request.
- **Disposal of Construction Demolition Debris:** All material generated during construction, renovation, or demolition of buildings, utilities, or other infrastructures in the campus are deposited in the specific dumpster which would be available on site.

## 7. Definitions

### Waste

According to United Nations Statistics Division, waste are “materials that are not prime products (that is, products produced for the market) for which the generator has no further use in terms of his/her own purposes of production, transformation or consumption, and of which he/she wants to dispose. Wastes may be generated during the extraction of raw materials, the processing of raw materials into intermediate and final products, the consumption of final products, and other human activities. Residuals recycled or reused at the place of generation are excluded.”

**Hazardous Waste**

Hazardous waste is waste that poses a severe threat to human health or the environment if improperly disposed of. According to the Environmental Protection Agency (USA), a substance is a hazardous waste if it appears on specific lists of hazardous waste or exhibits the established characteristics of hazardous waste.

**Non-Hazardous Waste**

Non-hazardous waste, does not pose a direct threat to human health or the environment, but it still cannot be dumped into a trash receptacle or a sewer line because of the risks it could pose. For example, paper, plastics, glass, metals, etc. are non-hazardous waste because it is not toxic by nature.

**Chemical Waste**

Chemical waste is generated from the use of chemicals in laboratories for teaching and research activities carried out in the campus. According to Environmental Health and Safety (USA), Chemical waste includes any solids, liquids or gases containing or contaminated with flammable solvents (e.g., acetone, alcohols, acetonitrile) or leachate toxic materials (e.g., heavy metals, pesticides) or corrosives (e.g., hydrochloric acid, potassium hydroxide pellets) or reactives such as oxidizers, cyanides, sulphides, explosives, unstable materials and water-reactive materials (e.g., sodium metal, benzoyl peroxide) or toxic materials including mutagenic, carcinogenic, acute or chronic toxicity materials (e.g., chloroform, ethidium bromide) or polychlorinated biphenyls (> 50 ppm concentration) or non-returnable gas cylinders.

**Biomedical Waste**

Biomedical waste is generated during the diagnosis, treatment or immunisation of human beings or animals or in research activities pertaining thereto or in the production or testing of biologicals, and including categories mentioned in Schedule I of Biomedical Waste (Management and Handling) Rules 1998, Ministry of Environment, Forest and Climate Change (MoEF), Gov. of India.

**Biodegradable Waste**

Any organic wastes that can be degraded by microorganisms into simpler stable compound are biodegradable waste.

**Non-biodegradable Waste**

Any wastes that cannot be degraded by microorganisms into simpler stable compounds are non-biodegradable waste.

**e-Waste**

Electronic wastes (e-waste) includes all kinds of electronic wastes like CDs and DVDs, cell phones and chargers, used ink jet cartridges, tapes, computers, printers, and TVs.

**Universal Waste**

Universal waste includes all rechargeable and specialty batteries and fluorescent lamps.

## 8. Waste Management Activities undertaken in the Assam Don Bosco University

*Compost Peat installed in Assam Don Bosco University*

*Students preparing the feed for Compost Peat*

*Students applying Bio-organic fertilizer in the Campus*