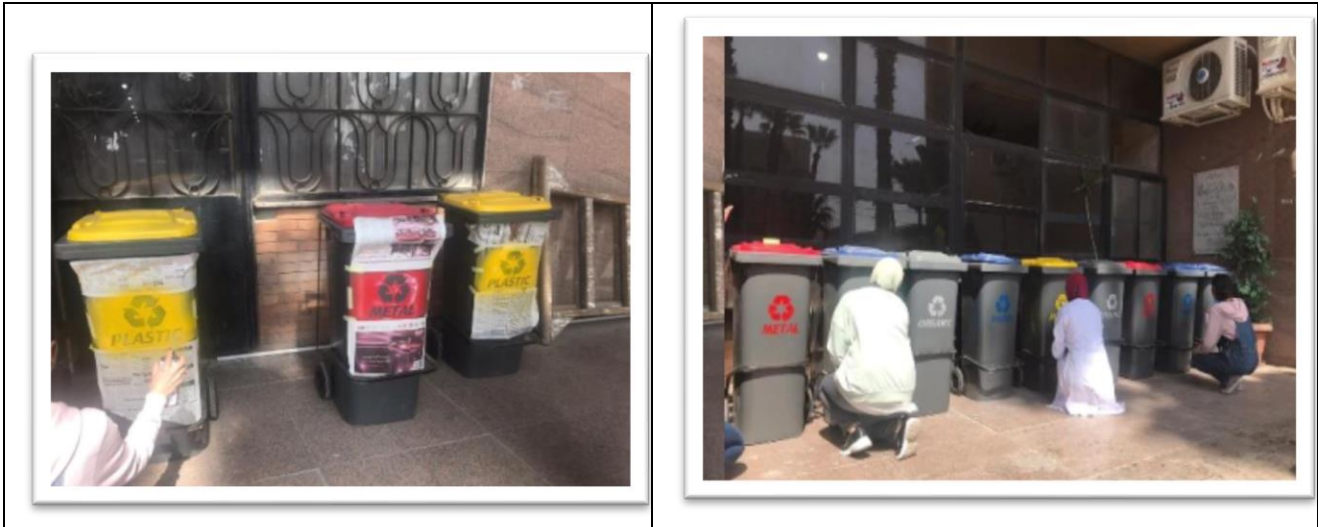


Alexandria University Program towards Net Zero

1 Waste recycling



Recycling Program for University Waste (Alexandria University, Egypt)



Recycling of plastic waste at the Faculty of Science (Alexandria University, Egypt)

**Description:**

Alexandria University developed the initiative of "separating and recycling waste", which aims to protect the environment, maintain the cleanliness of colleges and develop environmental awareness within the framework of the concepts of green economy and sustainable development to achieve the vision of Egypt 2030.

1-The University applied a strategy in all its faculties to segregate the waste into special containers for plastic, papers, glass, and metal objects.

2- The University set an initiative for waste recycling in all faculties with a set of labeled containers for waste segregation distributes in each faculty.

3- The University set initiative for increasing the awareness about Purchase Recycled Products: It is important to buy products made from recycled materials to strengthen the market for recyclables.

4-The University developed an initiative with the governorate (Alexandria Youth alliance) to participate with us in waste management initiative.

5-The University has a contract with Nahdet-Misr Company (the official company in the governorate for waste disposal) for collection and recycling.

6- The University is trying to develop an initiative as a student project with Titan® Company for manufacturing of MDF sectors using university collected waste for maximal benefit from this waste.

7- University students at the Faculty of Science initiated a student project for plastic recycling.

Our recycling program aims to recycle waste by separating it from the source into:

- Organic waste and food residues.
- Plastic waste and plastic bags .
- Mineral waste and carbonated water cans.
- Paper waste

This allows the recycling and utilization of as much of the waste as possible instead of disposing of it in landfills, which will eventually lead to its burning and the consequent pollution of the environment and the increase in emissions of greenhouse gases. Our university promotes maintaining the campus environment in clean condition using high quality non-toxic detergents and cleaning materials.

### Reduction of Paper and Plastic use on Campus

			
<p>Program for separation of Paper, Plastic, aluminum cans, glass and organic waste in Campus (Alexandria University, Egypt)</p>		<p>Plastic recycling machine at the Faculty of Science (Alexandria University, Egypt)</p>	

**Program 1:** Development of electronic archiving system; the university faculties and the main campus are moving toward the electronic archiving system to reduce paper consumption.

**Program 2:** University decrees to reduce the use of paper in the campus:

2.1: The president decree to use the e-mails for communications inside the campus and between the university main campus and all the other campuses.

2.2: In the situations, the university or any of its faculties need to print the official documents; this has to be on recycled paper (2 faces copy).

2.3: The University formulated a community for administrative reform to minimize the administrative processes and decrease the use of papers except in who are relevant to financial process.

**Program 3:** Digital transformation toward electronic exams to reduce paper consumption.

**Program 4:** Digital transformation toward electronic course to reduce paper consumption and books printing.

**Program 5:** Electronic administration of student courses by about 50% instead of written administration to reduce paper consumption.

**Additional evidence link:**

<https://www.alexu.edu.eg/index.php/en/community-development-and-environmental-affairs/6435-alexandria-university-initiative-to-separate-and-recycle-waste>

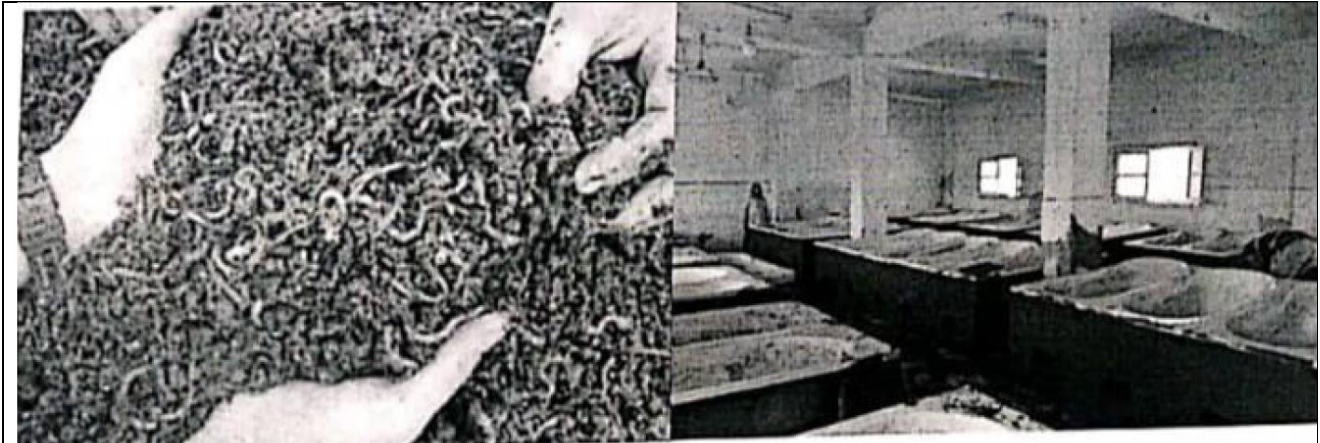
**Additional evidence link:**

<https://www.alexu.edu.eg/index.php/en/community-development-and-environmental-affairs/6435-alexandria-university-initiative-to-separate-and-recycle-waste>

### 3. Reduction of Organic Waste Treatment



Leaves and organic waste were treated for the vermi-compost to produce organic fertilizers to use in the Campus gardens (Alexandria University).



The Faculty of Agriculture recycles 100% of its organic waste (Alexandria University).

#### Description:

##### 1- The strategy of the Faculty of Agriculture for the recycling of organic waste:

The Faculty of Agriculture recycles 100% of its organic waste through the following procedure:

- Utilization of the treated agricultural byproducts in farm animals feeding.
  - Utilization of the treated agricultural byproducts for the vermi-compost to produce organic fertilizers.
  - Utilization of the treated agricultural byproducts through a special insect (black soldier) to produce organic fertilizers and protein sources.
  - Mass production of active Biochar from agricultural waste to remove any water impurities or pesticides residues.
- 2- The organic waste in Alexandria University is handled according to the contract with Nahdet Misr company. All organic wastes are collected in organic waste containers. Then the company collects these waste bags and delivers it to waste treatment facility for processing.
- 3- In addition, the University students at the Faculty of Science initiated a student project for organic waste recycling. Leaves and organic waste were treated for the vermi-compost to produce organic fertilizers to use in the Campus gardens (Alexandria University).

**Additional evidence link:** <https://www.alexu.edu.eg/index.php/en/community-development-and-environmental-affairs/6435-alexandria-university-initiative-to-separate-and-recycle-waste>

#### 4. Inorganic Waste Treatment



Recycling Program for both materials and equipment with metals and derivatives (Alexandria University, Egypt)

#### Description:

#### 5. Disposal of Inorganic Waste

The University follows the Egyptian laws associated with disposal of hard materials waste No. (6) for the year 2009 and No. (9) for the year 1982 concerning with environment protection. Alexandria University has a yearly contract with **Alexandria Governorate Hazardous Waste Management (NASERIA)** for the disposal of Inorganic Waste (attached a copy of the Contact).

1- In general the hard material waste in the University is divided into two types including:

- **Non-medical waste:**

Products which are collected and stored in a far place in the faculties which are then removed to a general dump for recycling.

Heavy metal: Heavy metal waste consists of both materials and equipment with metals and derivatives.

Examples: Batteries, amalgam, broken mercury thermometers.

- **Medical waste:**

Medical waste consists of several different subcategories that should all be dealt with in the same way:

Potential infectious waste includes all waste items that are contaminated with or suspected of being contaminated with body fluids.

Examples include:

Blood and blood products, used catheters and gloves.

2. Inorganic Wastes are collected in separate containers labelled for inorganic waste. The garbage bags are collected daily by Nahdet Misr company for processing.
3. Batteries and other E-wastes are collected separately inside Alexandria University Campus and are delivered for special treatment by Nahdet Misr company. The E-Material are never trashed into a regular trash.

## **6. Recycling of Solid and Electronic Waste in the Faculties and Institutes of Alexandria University**

According to the decision of Alexandria University to transfer all solid waste to institutes, colleges, hospitals and university cities of the University at the Agricultural Research and Experiments Station in Abis as a central storehouse for the collection of iron priests (Wood - Iron - Alumetal - Computers - Projectors - Photocopiers - Printers - Fire Extinguishers - Doors - windows - wires, lighting poles, electric panels.....etc.), which are considered valuable solid waste worth recycling.

Recycling of solid waste is a good investment project, and with the increase of environmental awareness worldwide, the demand of recycled materials will rise. Alexandria University can save production and energy costs and reduce the negative impacts that the extraction and processing of virgin materials has on the environment.

Recycling old devices saves energy. It also means that fewer raw materials need to be drawn from nature to create new devices. Reusing old devices prevents e-waste by keeping it out of landfills.

**The environmental aspect:** The process of recycling solid and electronic waste mainly contributes to reducing the percentage of pollution of all kinds, by reducing the accumulation of waste, which contribute greatly in pollution of the environment due to the release of polluting gases and toxic elements in the air, water, and land. The process of recycling solid and electronic waste contributes in reducing the impact of human activity on the planet Earth.

**Economic aspect:** The process of recycling solid and electronic waste play an important role in the reduction of economic expenditures, helping countries to meet the challenges related to the high prices of raw materials such as oil and coal. Recycling reduces the reliance on the export of the primary resources of many industries, thus reducing the cost of production. Which result in lower bill of taxes, customs duties, insurance premiums, transportation. On the other hand, the recycling process helps in reducing the consumption of natural raw materials used in different industries. Accordingly, the Energy consumption for manufacturing and production processes will be reduced.

### **The disposal Program**

- A specialized committee is selected including a member from the Engineering Department, according to the devices or tools under investigation.

- In case the devices are not useful, the committee recommends that the items will be transferred to the Agricultural Research and Experiments Station in Abis.
- Recycling warehouses are divided into sections according to the type of materials being recycled, for example: Calculators, printers, wood, Aluminum, etc
- Working teams are selected from the university faculties' maintenance units to benefit from these solid and electronic waste.
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**Additional evidence link: Maintenance Unit for lab apparatus and electronics:**

[https://alexu.edu.eg/index.php/?option=com\\_content&view=article&id=5912&catid=21&lang=ar-AA](https://alexu.edu.eg/index.php/?option=com_content&view=article&id=5912&catid=21&lang=ar-AA)

**7.Toxic Waste Treatment**



**Description:**

The biohazards, medical hazards, and toxic chemical compounds are handled by a **special contract** with **Nahdet Misr for Modern Environmental services** company, which process these wastes according to the Egyptian law number 6 for year 2009 and low number 9 for year 1982. (attached Contract copy)

- **Medical waste:**  
 Medical waste consists of several different subcategories that should all be dealt with in the same way:  
 Potential infectious waste includes all waste items that are contaminated with or suspected of being contaminated with body fluids.  
 Examples include:  
 Blood, blood products, used catheters and gloves.

**8.Sewage Disposal**



The sewage water will be treated and reused in the irrigation of green areas in the project (Alexandria University)



The irrigated water supplied to the fish farm at the Agriculture Experimental Research Station of the Faculty of Agriculture is recycled to irrigate the crops, vegetables, and fruits of the land farm.

**Description:**

**Elements of Green Building Implementation as Reflected in all new construction and renovation policies in the new buildings in Abis campus:**

- The area of the project is 160 acres, a general site for educational buildings, and 120 acres are complementary activities. The percentage of green areas and lake is about 52% in addition to 25% streets and lanes.
- Water-saving plots are used, which will reduce water consumption by about 30%. The sewage water will be treated and reused in the irrigation of green areas in the project.





- Rainwater is collected in the main lake and used for irrigation.
- The use of plants with few water rationed plants to reduce irrigation needs in addition to absorbing quantities of rainwater to reduce the severity of rain spells.

### **Sewage Disposal and recycling**

- Providing a sewage treatment plant at the university to make it suitable for irrigating green areas and gardens inside the university campus.
- The irrigated water supplied to the fish farm at the Agriculture Experimental Research Station of the Faculty of Agriculture is recycled to irrigate the crops, vegetables, and fruits of the land farm. The recycled water is rich with natural fertilizers and enhances the crops production.
- In addition, the water recycling in Fish Aquaculture of the Faculty of Agriculture, Alexandria University: The water sewage of the Aquaculture of the Faculty of Agriculture, Alexandria University which consist of eight ponds (one acre and quarter/each) in Abis region. Alexandria University used the recycled water for crops culturing in the adjacent agriculture research center in Abis.
- The use of biochar produced from Agricultural waste and waste Forests in residual removal chlorpyrifos pesticide Imidacloprid is from water agricultural drainage. Cooperation project between the Egyptian Academy of Research Science and Technology and the Czech Academy of Sciences.

### **Additional evidence link**

**Link for Sustainable Development:** <https://alexu.edu.eg/index.php/en/sustainable-development>

**Link for Green University:**

[https://alexu.edu.eg/index.php/?option=com\\_content&view=article&id=5932&catid=21&lang=ar-AA](https://alexu.edu.eg/index.php/?option=com_content&view=article&id=5932&catid=21&lang=ar-AA)

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