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## Alexandria University – A Green University

Alexandria University is a pioneering University in changing many societal and environmental beliefs and practices that could negatively affect climate changes and carbon emissions. It has an important role in as a leader university and is committed to participate to developing environment friendly infrastructure, arranging universities according to sustainable development processes and adherence to green environment standards.

The university took an initiative towards to implement the state's general policies launched to ensure the role of universities to implement sustainability and a green environment through the university's unity and activities and the product of scientific research and its application.

The implementation green university is in line with of the goals of the United Nations to achieve true sustainable development, whether for the university community or the surrounding community. It is also in line with Egypt's 2030 Sustainable Development Plan and is compliant with the recommendations of the United Nations on the necessity of campus sustainability.

Sustainability indices for green universities is based on 10 basic axes that represent the basic concepts of the principles of preserving the environment, sustainability, environment friendly infrastructure and fulfilling the standards for both energy, climate exchange, waste management, water management, internal transport, environmental quality, and sustainability compliance with environmental laws and legislation.

Alexandria University adopted a set of integrated standards on strategies, tools and resources that the university should adopt and use in order to achieve the principle of sustainability. Such standards should bring about a positive change on the environmental aspect of the university campus, its buildings, reduce environmental impacts, work to reduce the environmental footprint of Alexandria University and raise the positive environmental footprint of the university.

Green economy as a context of sustainable development is one of the important tools available to achieve the areas of development, and it contributes to eliminating waste of resources, achieving economic growth, promoting social inclusion, improving human conditions, creating job opportunities and providing decent work for all. At the same time, this will ensure the sustainability of ecosystems' goods and services and a clear understanding of the

interdependence between environmental sustainability and good political practices and effective institutional mechanisms, so that this will be decisive criteria for setting an effective national policy and making a fundamental contribution to the international efforts to achieve sustainable development.

Foundation of a green university has the following objectives:

- spreading the culture of sustainability in Egyptian universities.
- To contribute to having environment friendly buildings in Alexandria University
- Promote university-led social change in relation to sustainability goals.
- Contributing to achieving global goals for preserving the environment.

The criteria to achieve the principle of green sustainability in Alexandria university are as follows:

1. Energy and Climate Change (EC). Using solar energy as a clean source of electricity as an alternative to electricity based on fuels.
2. Providing green spaces on campus.
3. Transfer within the university. Adopting means of transportation inside and outside the university campus for students, staff and faculty members that do not pollute the environment.
4. Waste Management (WS).
5. Water (WR).

#### Smart Green University Proposal

Indicators:

##### 1. Energy and Climate Change (EC)

According to this indicator, solar energy is relied on as a clean and renewable source of electricity instead of relying on traditional sources of electric energy that depend on fossil fuels and pollute the environment. In this context, we suggest:

- The use of lighting poles inside the university campus equipped with solar cells for night lighting.
- Putting solar energy cells on the roofs of buildings inside the campus to provide those buildings with electric energy during work periods.
- Supplying cafeterias on campus with solar energy cells to generate electricity instead of the traditional sources of electric energy
- Adopting the use of LED lighting that save electrical energy inside the campus buildings instead of the traditional lighting that use more electrical energy.



- Taking into account the use of devices that help to save electricity as much as possible on the campus.
- Establishing a mechanism to save the use of electric energy inside the university campus that ensures the ideal use of electric energy inside the classrooms, as well as administrative offices during non-working hours, to prevent energy waste and achieve optimal use of it while continuing to maintain the efficiency of the educational process.
- Adopting the concept of the smart building in order to accommodate the use of all devices energy saving which means using internet-connected technology, as an integral part architecture engineering to monitor and control structural design elements to share information between users, systems and buildings.

## 2. Providing green spaces on campus

Designing open spaces inside the university campus in a way that provides the largest possible amount of green spaces and trees, which would reduce the rate of carbon dioxide emissions resulting from activities on the campus.



## 3. Transfer within from /to the University university

The transportation system plays an important role on the level of carbon emissions and pollution sources in the university. The transportation policy encourages reducing the number of cars in universities, and the use of campus buses and bicycles which collectively create a healthy environment. Also, this policy encourages students, staff, and faculty to walk around, and to avoid using private cars. The use of environmentally friendly public transportation will reduce the carbon level on campus.

- Providing bicycle parking in suitable spaces allows students and workers to use them to move within the university campus effectively as an alternative to traditional means of transportation.



- Providing mass transportation (buses) for staff and faculty members to travel to and from the university campus instead of using private cars as a single means of transportation, which will reduce carbon dioxide emissions.

- Adopting the state's initiative to provide bicycles announced by the Ministry of Youth and Sports under the slogan "Your bicycle is Your Health" for students and workers with supported prices to expand the base for practicing sports and play sports a lifestyle



#### 4. Waste Management (WS)

According to this indicator, a policy is adopted to recycle waste by separating it from the source into four types:

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

This allows for the recycling and utilization of as much of that 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.

Alexandria University adopted a mechanism for healthy food and beverage within university dorms (providing healthy, balanced foods, a mechanism for packaging food and drinks, storing them, and a mechanism for maintaining a healthy atmosphere for dining places on campus).

#### 5. Adoption of a preservation mechanism for water.

Water use in the campus is an important indicator in the sustainability scale. The aim is to urge universities to reduce water use, increase water conservation programs, and protect the environment.

The steps taken are: a water conservation program, a recycling program Water, Using Water-Saving Equipment, and Treating Wastewater . This was carried out through:

- Water-saving appliances are used instead of traditional appliances. This indicates the extent to which water-saving devices are used (for example, using a sensor-controlled automatic hand washing faucet, and highly efficient bathroom appliances.
- Supplying water taps with water saving units.
- Adopting a mechanism for maintaining water pipes to prevent waste resulting from leaks.
- Adopting plans and mechanisms to maintain the university's internal supply networks and taps to prevent water wastage.
- Providing a wastewater treatment plant in the university to make it suitable for irrigation of green spaces and gardens located within the university campus

