

## Template for Evidence(s) UI GreenMetric Questionnaire

University : Alexandria University  
Country : Egypt  
Web Address : <https://alexu.edu.eg/>

### [4] Water (WR)

#### [4.2] Water Recycling Program Implementation



**Air conditioning water collection and reuse unit - Faculty of Engineering**



**Wastewater treatment unit at the Faculty of Engineering**



The water sewage of the Aquaculture of the Faculty of Agriculture (Alexandria University, Egypt)



100 m<sup>3</sup> Desalination Unit, Wadi El-Natroom (Faculty of Agriculture, Alexandria University)



**Innovative Renewable Energy (RE) Driven - Multi Stage Flash (MSF) System with Salts Precipitator and Nano Filtration (NF) Feed Water pre Treatment (RE-NF-MSF). (Faculty of Agriculture, Alexandria University)**



**The Water Center of Excellence, funded by USAID and administered by the American University (AUC) in Cairo – (Faculty of Engineering, Alexandria University)**



### **Water Excellence Center - Alexandria University**

The program's students visited the drinking water treatment plant in Alexandria (Al-Mansheya 2) to learn about the stages of water purification and the plant's boredom.

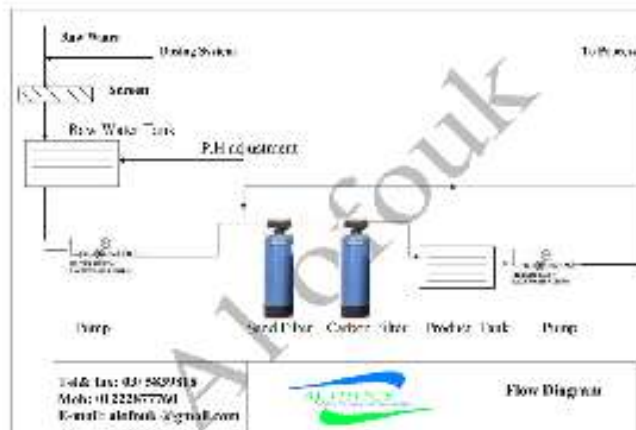
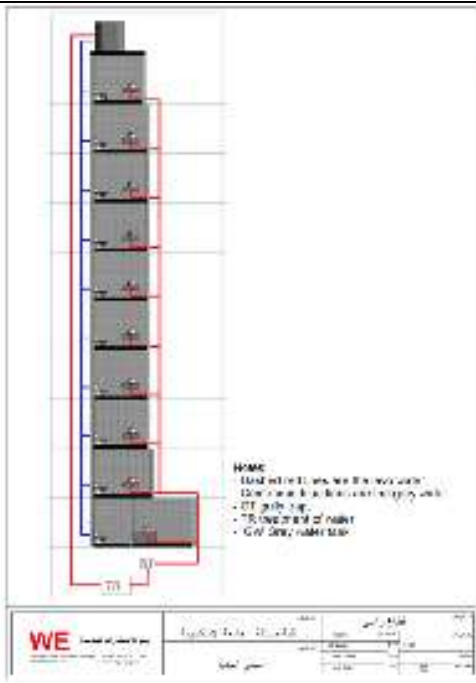


### **Water Excellence Center - Alexandria University**

Training for civil and environmental engineering students at the Eastern Wastewater Treatment Plant in Alexandria



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

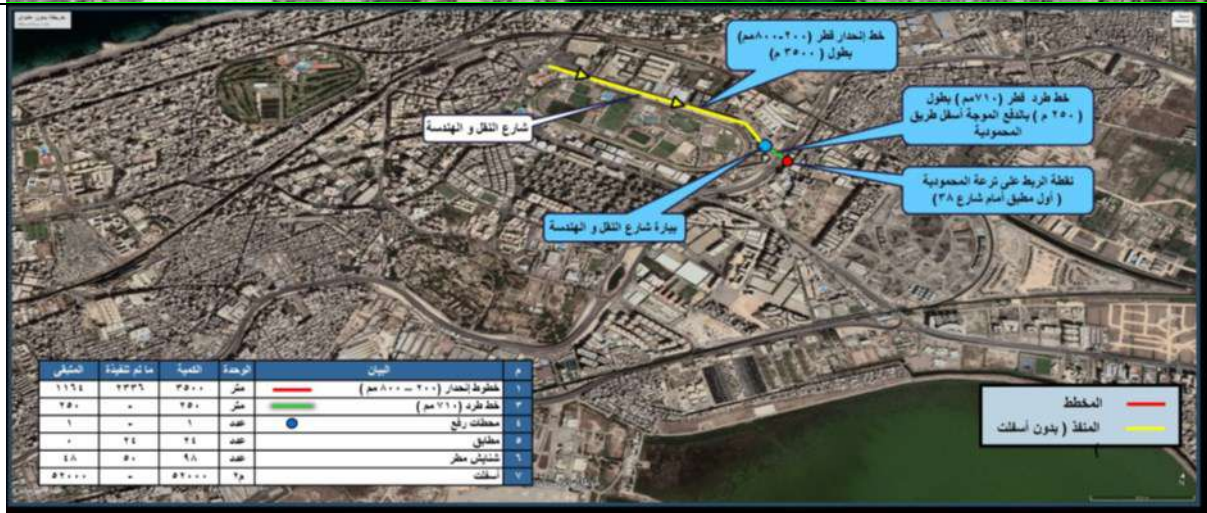




# Rooftop Cultivation



Grey water recycling system organized by Faculty of Pharmacy (Alexandria University, Egypt), and reused in rooftop cultivation.





**Integrated strategy project for rainwater management in Alexandria Governorate in cooperation with Alexandria University**





**Integrated strategy project for rainwater management in Alexandria Governorate in cooperation with Alexandria University**



**Integrated strategy project for rainwater management in Alexandria Governorate in cooperation with Alexandria University**







**Mahmoudiyah Axis Project**



**Second treatment of Alexandria University Sewage by Alexandria Sanitation Company**



Reclaiming 800 thousand acres in the new delta using treated water from sewage



Raising awareness among Alexandria University students about wastewater treatment through summer training and periodical visits to the laboratories of Alexandria Drinking Water Company- Faculty of Science.



Raising awareness among Alexandria University students about wastewater treatment was achieved through summer training activities conducted at Alexandria Sewerage for students from various faculties,

including Science, Engineering (Civil, Mechanical, and Mechatronics), Commerce, Arts (Surveying, Mapping, and GIS), and Fine Arts (Architecture), September 2024.



The Center of Excellence for Water at Alexandria University is organizing a training program for scholarship students in collaboration with EPROM Company. This initiative aims to equip students with practical skills in water management including training courses about Water Treatment for Industrial Applications, and Wastewater Plant Operations and Troubleshooting, ensuring they are well-prepared for the business sector and aligned with labor market requirements (March, 2024).



Training school students on water recycling methods (chemically, physically, and biologically), in order to support and strengthen the participation of local communities in improving water and sanitation management- Faculty of Science.

نوع العينة : 3 عينات مياه الصرف (الزراعي والصحي).  
 تاريخ وقت واختبار العينات : 2022/10/15  
 الجهة التي تم تحضير العينة منها : مسار تجمع ونقل مياه الصرف (الزراعي والصحي) لاستصلاح مساحة 362 الف فدان جنوب محور التنمية (محطة رفع & 1)  
 اسم القائم بجمع واحضار العينة : مندوب من الشركة  
 اسم المشروع : مسار تجمع ونقل مياه الصرف (الزراعي والصحي) لاستصلاح مساحة 362 الف فدان جنوب محور التنمية (محطة رفع & 1)  
 المالك : وزارة الموارد المائية والري  
 جهة الاشراف والتفتيش: الهيئة الهندسية للآثار المسلحة - ادارة المتاحف  
 استشاري المشروع : جنود (مكتب الدراسات الهندسية والبيئية والتنمية التحتية)  
 المقبول العاين شركة حسن علام للإنشاءات

	Test	Sample 1 مصرف العموم	Sample 2 مصرف العموم	Sample 3 المحطة الغربية	Concentration units
1	pH	8.53	7.96	7.62	ppm
2	TSS (Total suspended solids)	2.15	2.73	6.88	ppm
3	COD (Chemical oxygen demand)	30	49	67	ppm
4	BOD (Biological oxygen demand)	26.2	24.8	38.97	ppm
5	Free chlorine	0.01	0.25	0.38	ppm
6	SO <sub>4</sub> <sup>2-</sup> (Sulphates)	116	650	91	ppm
7	Phosphates	0.02	0.618	2.18	ppm
8	NO <sub>3</sub> (Nitrates)	28.9	35.7	23.8	ppm
9	F (Fluorides)	0.71	1.12	0.44	ppm
10	Total Heavy metals (Zn, Pb, As, Cd, Cu, Cr, Ni)	0.146	0.189	0.145	ppm

- ❖ This report consists of one page.
- ❖ These results concern samples submitted by the supplier.

Executive Manager of Central Lab  
 Prof. Dr. Rehab M. I. Elsamra



Water samples from agricultural and sewage drainage were chemically analysed to ensure their suitability and safety for use in the reclamation of 362,000 Feddan south of the Dabaa area without causing environmental pollution. Faculty of Science (Central Lab)



The Faculty of Pharmacy won third place in the Alexandria Governorate for the 2024 National Initiative for Green Smart Projects with its 'Green Cycle' project, competing in the non-profit community initiatives category. This marks the project's second consecutive year of recognition, having previously secured first place last year.

#### Description:

#### Alexandria University program for water recycling:

1. Air conditioning water collection and reuse unit in Faculty of Engineering.
2. Wastewater treatment unit at the Faculty of Engineering
3. Providing a sewage treatment plant at the university to make it suitable for irrigating green areas and gardens inside the university campus.
4. 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.
5. 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.
6. 100 m<sup>3</sup> Desalination Unit, Wadi El-Natroom (Faculty of Agriculture, Alexandria University)
7. 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.
8. IOT Pilot Project in Egypt by Shanghai Water Saving Irrigation Corp. Etd performed an automatic controlled irrigation systems IOT project for modern irrigation technology. The company implanted the IOT platform project to irrigate economic crops and facilitate irrigation systems to overcome the water shortage problems in Egypt. This project will be performed in Alexandria University Farm for agroecological farming in Egypt.



9. Raising awareness among Alexandria University students about wastewater treatment through summer training and periodic visits to the laboratories of the Alexandria Drinking Water Company, supporting the achievement of the Sustainable Development Goals by enhancing partnerships for sustainable development, complemented by collaborations that mobilize and share knowledge, expertise, and technology.
10. Raising awareness among Alexandria University students from various faculties—including Science, Engineering (Civil, Mechanical, and Mechatronics), Commerce, Arts (Surveying, mapping, and GIS), and Fine Arts (Architecture)—about wastewater treatment was achieved through summer training and periodic visits to the laboratories of the Alexandria Sewerage Company. This effort supports the achievement of the Sustainable Development Goals by enhancing partnerships for sustainable development and fostering collaborations that mobilize and share knowledge, expertise, and technology. The training aimed to provide students with essential scientific skills and practical experience to prepare them for the job market (September 2024).
  - **Faculty of Science:** Theoretical training introduced the role of the Sewerage Company, while practical training involved visits to treatment plants, central laboratories, and lectures on occupational safety and industrial sewage.
  - **Faculty of Arts (Surveying, mapping, and GIS):** Training included surveying applications, urban planning, and the practical use of leveling instruments, total stations, and GPS devices, concluding with lessons on ArcGIS and sewage system design.
  - **Engineering Colleges:** Civil Engineering students trained in network renewal and design, while Mechanical and Mechatronics students learned about pump components, welding, and electrical generators, with visits to various workshops.
  - **Fine Arts (Architecture):** Students received training on project design drawings and estimating costs.

[https://www.facebook.com/profile/100068944998517/search?q=%D8%A7%D9%84%D8%B9%D9%84%D9%88%D9%85&locale=ar\\_AR](https://www.facebook.com/profile/100068944998517/search?q=%D8%A7%D9%84%D8%B9%D9%84%D9%88%D9%85&locale=ar_AR)

11. The Center of Excellence for Water is organizing a training program for scholarship students. This training is conducted in collaboration between the Water Excellence Center at Alexandria University and EPROM Company to provide a course for a group of students from the Water Excellence Center. This initiative reflects Alexandria University's commitment to equipping its students with practical skills related to water management, ensuring they possess the competencies needed by the business sector while aligning their studies with labor market requirements. The Center of Excellence for Water at Alexandria University has organized a training program for students in the Water Excellence Center Scholarship and the Civil and Environmental Engineering Program. Alexandria University, EPROM Company, and the students are participating in the following two training programs:
  - **Water Treatment for Industrial Applications**
  - **Wastewater Plant Operations and Troubleshooting.**
12. Training school students in water recycling methods; chemical, physical, and biological, as a part of community service activities to support and strengthen the participation of local communities in improving water and sanitation management.
13. Agricultural and sewage drainage water samples were subjected to chemical analysis to determine whether the water is safe and suitable for use in reclaiming 362,000 Feddans of land located south of the Dabaa area by the Ministry of Water Resources and Irrigation. The goal is to ensure that using this water for land reclamation does not cause environmental pollution. The analysis was conducted by the Faculty of Science's Central Laboratory.
14. The Faculty of Pharmacy won the third place in the Alexandria Governorate for the National Initiative for Green Smart Projects in its third edition (2024) with its 'Green Cycle' project, competing in the category of non-profit community initiatives and participations. Notably, this project has now won for the second consecutive year, having previously achieved first place in the Alexandria Governorate last year.

**Additional evidence link: 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)



## Renewable Energy and Water Desalination Activities at Alexandria University

Renewable Energy Center site is a host of different RE technologies and different RE-Desalination technologies. The site “ East of EL-Gaar Village” at Wadi El-Natroon has both predictable wind energy as well as an abundance of sunlight. Thus, this is a natural application for a hybrid system.

The modular hybrid power supply concept proposes the coupling of all sources of energy, storage media and loads on the AC-side.

### Advantages of the Modular Hybrid RE systems:

- Simplicity in System Design
- Expandable, can be run autonomously or be connected to a larger grid
- Offer higher reliability and supply security
- Lower power cost for the consumers
- Production of AC single phase or three phase
- The AC-side structure provides standardization, quality assurance and serial production
- The coupling on the generation technologies on the AC side offers the possibility of placing the generators far apart from each other (distributed generation).

REC site is planned to be a host of different RE technologies and different RE-Desalination technologies such as:

- Hybrid RE technologies (solar, wind, biomass, Hydrogen and fuel cell)
- Hybrid Desalination technologies (RO, MSF, NF,... Etc)
- Different types of solar cell technologies (thin film, Mono crystalline, Polycrystalline cells)
- Different solar energy technology (PV, CSP, Solar water heating systems, solar dryers)
- Solar Greenhouses.

**Activity:** Innovative Renewable Energy (RE) Driven - Multi Stage Flash (MSF) System with Salts Precipitator and Nano Filtration (NF) Feed Water pre Treatment (RE-NF-MSF)-, contract # RDI - C2/S1/148.

**Additional evidence link:** [www.areac-agr.com](http://www.areac-agr.com)

## Water Excellence Center - Alexandria University

The Center of Excellence for Water is a USAID- funded program, managed by the American University in Cairo. Its goal is to catalyze long-term improvement in Egyptian water resources management by improving its innovative applied research and educated enterprise.

Located at Alexandria University, and in cooperation with four Egyptian Universities (Ain Shams University – Aswan University – Beni Suf University – Zagazig University) and four U.S. Universities (University of California, Santa Cruz, Temple University, Utah State University, and Washington State University),

The Center of Excellence for Water is designed to be a state-of-the-art center that raises the quality of all aspects of higher education, including curriculum, teaching, and applied research to international standards.

The Center supports the Egyptian government, academia, and industry to address water challenges, and prepare a new generation of graduates and entrepreneurs to be change agents that stimulate economic growth.

Leveraging on the public-private partnerships established, the Center of Excellence for Water will be the hub for research and a vibrant network of Egyptian industries, research centers, and ministries.

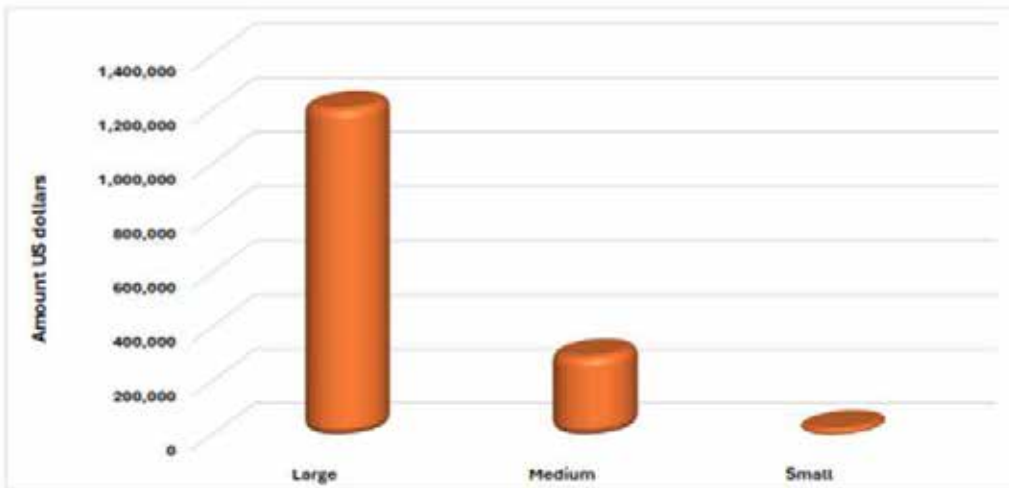


The following tables show the projects that were funded through the Water Excellence Center - Alexandria University.



**First Call Projects**

Type	No.	Amount in US dollars	Amount in Egyptian pound
Large Size Projects	5	1,209,183	37,275,726
Medium Size Projects	6	296,245	9,132,404
Small Size Projects	3	29,500	909,402.4
<b>Total</b>	<b>14</b>	<b>1,534,928</b>	<b>47,317,532</b>







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*Center of Excellence for Water*

No.	Name of Egyptian PI	Name of US PI	Project Title	Budget	Size
<b>Large size projects</b>					
1	(Ain Shams University)	(American University in Cairo)	Sustainable Low-cost Solution for Decentralized Sanitation System in Rural Egypt	215,000	Large
2	(Ain Shams University)	(American University in Cairo)	Using AI Tools to Optimize the Development of Novel Nano-enhanced Membranes for Water Desalination	250,000	Large
3	(Ain Shams University)	(Washington State University)	SMART Irrigation for Maximizing Water Use Efficiency (SIMWUE)	250,000	Large
4	(Beni Suef University)	(American University in Cairo)	Tailored enzymatic and nano-based treatment of wastewater to detoxify heavy metals and degrade antibiotics	250,000	Large
5	(Zagazig University)	(American University in Cairo)	Reducing pollution intensity in Egyptian drains using innovative techniques of electric coagulation using Direct Current by solar cell	244,183	Large
<b>Medium size projects</b>					
6	(Ain Shams University)		Low Cost Technology for Treating Industrial Wastewater for Irrigation Purposes	50,000	Medium
7	(Ain Shams University)		Optimizing Crop-Water Productivity Using Remote Sensing and Multi-Sources Data (WatSens)	46,400	Medium



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8	(Ain Shams University)		Solar Driven, Low Cost, Water Desalination Unit with Minimum Environmental Impact SLoW ME	50,000	Medium
9	(Alexandria University)		Domestic Greywater Treatment and Reuse Prototype	49,845	Medium
10	(Beni Suef University)		Fabrication of hybrid treatment and desalination system for oily wastewater treatment using MOFs composites - Experimental and computational studies	50,000	Medium
11	(Beni Suef University)		For an Integrated Brackish Water Desalination System - The Application of Water Incompatibility in Siwa Oasis as an Innovative strategy for the Production of Low-Cost Irrigation Water using Eco-Friendly Nano-Filtration Self-Cleaning System	50,000	Medium
<b>Small size projects</b>					
12	(Beni Suef University)		Large-scale and sustainable synthesis of commercially feasible TiO <sub>2</sub> /GO nanostructured thin-film composite-based forward osmosis membranes for water desalination (TG-PES-Memb)	9,500	Small
13	(Beni Suef University)		Sensing heavy metals in drinking water using nanophotonic structure	10,000	Small
14	(Beni Suef University)		Salinity sensor for desalination method using photonic crystals	10,000	Small



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Alexandria University Project (Accepted but didn't get administration approval)					
1	(Alexandria University)		Continuous Membrane Fabrication Module via Solvent or Emersion Casting technique for Desalination system by the application of Pervaporaton (PV) or Membrane Distillation(MD) techniques. (CMFM)	47,000	Medium
2	(Alexandria University)		Treatment of refinery waste by a novel supported solar photocatalyst system enabling zero liquid discharge	37,100	Medium
3	(Alexandria University)		Design of thermally-localized successive evaporation-condensation desalination unit (TSEC)	10,000	Small

Evidence Link: <https://www.facebook.com/profile.php?id=100069123600268>

**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.

**Green Cycle project in the Faculty of Pharmacy - Alexandria University**

The project began in October 2022 by organizing a number of events in cooperation between the Community Service and Environmental Development Committee, ASPSA, and the Alexandria Rotary Clubs, under the supervision and organization of Faculty of Pharmacy - Alexandria University.

Also, the faculty is seriously seeking to implement a grey water (wastewater) recycling system that depends on reusing wastewater from sewage basins only (without using wastewater from laboratory basins) by re-pumping it into the flushing bins in the toilets after work. Filtration and primary treatment. The grey water recycling initiative has a significant impact on rationalizing water use.

Also, taking advantage of rainwater for use in irrigation and regulatory operations.

**Alexandria University** have generalized this initiative in some of the faculties of Alexandria University in gradual stages.

**Link for Green Cycle Project:**

<https://fb.watch/mzqhBHazV4/?mibextid=j8LeHn>



## **Integrated strategy Project for rainwater management in Alexandria Governorate in cooperation with Alexandria University**

Remote sensing technology was used to know the current values of Rain and assess the current situation with the help of satellites. This is done with the help of the following artificial satellites:

- TRMM and GPM are two of the NASA satellites. (Administration National Aeronautics and Space Administration, United States of America)
- NOAA (National Oceanic, Atmospheric, and Space Administration, United States of America)
- NCEI (National Center for Environmental Information in the United States of America)

### **Proposed rain management strategy**

A separate network will be created to drain rainwater for the nearest body of water for areas close to the body of water. The first area is the Corniche, where rainwater is collected and discharging it into marine estuaries. The second area is on both sides of the Mahmoudiyah and Beheira axis near the airport. The rainwater is collected and part of it is drained on the canal and the other part on the airport lake.

In the third stage of the project, the two projects on the airport lake to exploit rainwater will be linked to the New Delta project. The rainwater will be used to irrigate the crops, vegetables, and fruits in the New Delta.

### **Secondary treatment of Alexandria University wastewater by the Alexandria Sanitation Company**

An amount of water of **1,240,575.5 m<sup>3</sup>** is consumed by all faculties and institutes affiliated with the Alexandria University, of which the amount of sewage is **1,116,625.26 m<sup>3</sup>**, which is lifted through a group of lifting stations to be treated through treatment stations affiliated with the Alexandria Sanitation Company.

1. Secondary biological treatment, where solid waste is separated from liquid waste.
2. **Treated water:** As for the water resulting from first treatment, it is reused within the New Delta Project (the value of the reused water for Alexandria University represents **1,116,625.26 m<sup>3</sup>**).
3. The Tertiary treatment for use in land reclamation with a design capacity of **7.3 million m<sup>3</sup>**, include **1.7 million** cubic meters of treated wastewater form the secondary treatment.

## **Expansion and development project of the Western Purification Treatment Plant**

The Alexandria Sanitation Company participated in organizing the consultation session to present the results of the environmental and social impact assessment study for the expansion and development of the Western Sewage Treatment Plant, in the conference hall of the training centre.

Participating in the session were the Chairman of the Board of Directors of the Alexandria Sanitation Company, the Chairman of the Board of Directors of the Alexandria Drinking Water Company, the head of the Central Administration of the Environmental Affairs Agency in Alexandria, representatives of the Holding Company for Potable Water and Wastewater, representatives of the Executive Authority for Water and Sanitation Projects, executive leaders in the governorate, and professors of Alexandria University.

The presentation of the project's environmental impact assessment study was reviewed, and included an overview of the project and its importance, the methodology for evaluating environmental and social impacts, and the features and positives of the project.

Alexandria University, through its professors, has a major role in studying environmental impact assessment and in the various stages of project implementation. Which increases its role in serving the Alexandrian community.

The project to raise the efficiency of the Western Purification Plant is considered a priority for the sewage system in Alexandria due to the increase in current and future transactions coming into the plant. The project aims to increase the capacity of the Western Purification Treatment Plant, which is currently operating with a design capacity of 460,000 m<sup>3</sup>/day, to reach 850,000 m<sup>3</sup>/day in two phases to meet current and development needs until 2050, improve the quality of treated water discharged outside the plant, and improve the general environment in the region by treating Water and rehabilitating it for reuse again and achieving sustainable development goals.



The project includes implementing a digester for the Western Purification Treatment Plant to take advantage of the sludge resulting from wastewater treatment to extract methane gas and use it to generate electricity, raise the efficiency and improve the properties of the sludge after analyzing it inside the digesters, reduce environmental pollution, and achieve economic balance within the station.

**Additional evidence link:**

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

<https://alexu.edu.eg/index.php/en/2015-11-24-10-38-07/ranking?id=6011>

<http://sustainability.alexu.edu.eg/>

**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)

## Renewable Energy and Water Desalination Activities at Alexandria University

Renewable Energy Center (REC) site is a host of different RE technologies and different RE-Desalination technologies. The site "East of EL-Gaar Village" at Wadi El-Natroon has both predictable wind energy as well as an abundance of sunlight. Thus, this is a natural application for a hybrid system. The modular hybrid power supply concept proposes the coupling of all sources of energy, storage media and loads on the AC-side.

The Center Goals are to:

- Remove the knowledge barriers against the installation of RE systems in Egypt.
- Enhance the utilization of renewable energy.
- Develop educational and e-learning program about renewable energy.
- Educate students, graduates, public and key stakeholders in Egypt and the Arab world on the various sources of renewable energy and its successful applications.
- Build the infrastructure necessary to develop, install and maintain renewable energy applications.
- Present a show case or a model for the successful utilization of renewable energy in Egypt.
- Continue excellence in all of our educational programs.

Advantages of the Modular Hybrid RE systems:

- Simplicity in System Design
- Expandable, can be run autonomously or be connected to a larger grid
- Offer higher reliability and supply security
- Lower power cost for the consumers
- Production of AC single phase or three phase
- The AC-side structure provides standardization, quality assurance and serial production
- The coupling on the generation technologies on the AC side offers the possibility of placing the generators far apart from each other (distributed generation).

REC site is planned to be a host of different RE technologies and different RE-Desalination technologies such as:

- Hybrid RE technologies(solar, wind, biomass, Hydrogen and fuel cell)
- Hybrid Desalination technologies (RO, MSF, NF,.... Etc)
- Different types of solar cell technologies (thin film, Mono crystalline, Polycrystalline cells)
- Different solar energy technology (PV, CSP, Solar water heating systems, solar dryers)
- Solar Greenhouses.

Activity:

- Hybrid System at Wadi El-Natroon, Egypt (HYRESS system).
- Innovative Renewable Energy (RE) Driven - Multi Stage Flash (MSF) System with Salts Precipitator and Nano Filtration (NF) Feed Water pre Treatment (RE-NF-MSF).

Sincerely,



**Prof. Said Mohamed Allam**  
**Vice PRESIDENT**  
**Community Service & Environment Development**  
**Alexandria University**

## Alexandria University program for Sewage Disposal

- 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.
- The sewage water will be treated and reused in the irrigation of green areas in Alexandria National University.
- Faculty of Pharmacy is seeking to implement a grey water (wastewater) recycling system that depends on reusing wastewater from sewage basins only (without using wastewater from laboratory basins) by repumping it into the flushing bins in the toilets after work. Filtration and primary treatment. The grey water recycling initiative has a significant impact on rationalizing water use.

An amount of water of 950,694.74 m<sup>3</sup> is consumed by all colleges and institutes affiliated with the Alexandria University, of which the amount of sewage is 870,925,266 m<sup>3</sup>, which is lifted through a group of lifting stations to be treated through treatment stations affiliated with the Alexandria Sanitation Company.

1. Secondary biological treatment, where solid waste is separated from liquid waste.
2. **Treated water:** As for the water resulting from first treatment, it is reused within the New Delta Project (the value of the reused water for Alexandria University represents 870,925,266 m<sup>3</sup>).
3. The Tertiary treatment for use in land reclamation with a design capacity of 7.3 million m<sup>3</sup>, include 1.7 million cubic meters of treated wastewater form the secondary treatment.

Sincerely,



**Prof. Said Mohamed Allam**

**Vice PRESIDENT**

**Community Service & Environment Development**

**Alexandria University**