Template for Evidence(s)
UI GreenMetric Questionnaire

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

[4] Water (WR)

[4.4] Consumption of treated water

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.

100 m^3 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)

Description:

Alexandria University program to decrease the water consumption in its faculties and buildings:

Campus water use 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. Among these criteria:

The water conservation program,

The water recycling program

The use of water-saving equipment

The treatment of wastewater

1- The University has applied a strategy in the faculties to decrease water consumption through installation of special parts on water taps, showers, toilette and urinal flushing which can conserve about 50% of water consumption.
   Water saving devices are used instead of traditional devices. For example, the use of a hand-washing faucet with automatic control via a sensor, and high-efficiency bathroom devices. Supplying water taps with water conservation units.
2. Adopting a mechanism to maintain water pipes to prevent waste resulting from leaks.
3. Adopting plans and mechanisms for maintaining the taps and internal supply networks of the university to prevent water wastage.
4. Providing a sewage treatment plant at the university to make it suitable for irrigating green areas and gardens inside the university campus.
5. 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.
6. 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.
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.

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

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

نائب رئيس الجامعة
لشئون خدمة المجتمع وتنمية البيئة

جامعة الإسكندرية
ALEXANDRIA UNIVERSITY

VICE PRESIDENT
Community Service & Environment Development

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)

الإسكندرية ٢١٥٢٦ – جمهورية مصر العربية – الشاطبي تليفون: ٥٩١٥٨٤٨(٢٠٣) فاكس : ٥٩٠٢٧١٥(٢٠٣)
Alexandria 21526 – Egypt , Tel: (203)5915848 Fax : (203)5902715
www.alexu.edu.eg v-presenv@alexu.edu.eg

نائب رئيس الجامعة
لشئون خدمة المجتمع وتنمية البيئة

جامعة الإسكندرية
ALEXANDRIA
UNIVERSITY

VICE PRESIDENT
Community Service & Environment Development

- 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. Ashraf Elghandour, MD
Vice president of graduate Students & Research
Acting Vice president Community Service &
Environment Development
Alexandria University

الإسكندرية ٢١٥٢٦ – جمهورية مصر العربية – الشاطبي تليفون: ٥٩١٥٨٤٨(٢٠٣) فاكس : ٥٩٠٢٧١٥(٢٠٣)
Alexandria 21526 – Egypt , Tel: (203)5915848 Fax : (203)5902715
www.alexu.edu.eg v-presenv@alexu.edu.eg