

SEKEM Insight

SEKEM's Journal for Culture, Economy, Society and Ecology in Egypt

Editorial

Dear Readers,

that a country like Egypt could benefit from renewable energy sources that use the sun is quite obvious. Among all available natural resources Egypt certainly has the most of it – and will for the foreseeable future.

And yet the way towards practically useful solutions is a long and challenging one. Not only will costs remain too high as long as fossil fuels stay too cheap. The lack of applicable and affordable equipment and technologies is also a major obstacle to anyone wishing to boost eco-friendly energy usage in Egypt. In addition, only a few experts in the development, manufacture and service of such equipment are available in the country.

SEKEM, the German DEG and a number of other partners have now launched a PPP project in the field of photovoltaics to change this. The Heliopolis University is one of the partners and will benefit from the establishment of a special research unit in the field. The required test facility has already been built as the lead article in this issue reports.

Your Team of Editors

Find SEKEM also on the Internet at:



Photovoltaics

Heliopolis University Benefits First

Forestry

SEKEM Starts Timber Production

Religions

Cooperation for Tolerance

Heliopolis University Benefits From New Photovoltaics Project

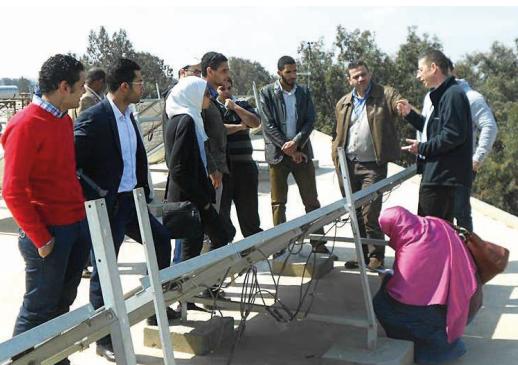
A new solar energy project the SEKEM Holding is carrying out with the German DEG has now led to a demonstration site and laboratory that will lay the groundwork for thematic research at the Heliopolis University.



Egyptian experts receive instruction on the professional use of photovoltaic equipment in the framework of a "Train-the-Trainer" course. They will then pass on their skills to their own apprentices later thereby multiplying the know-how.

SEKEM Insight has often reported on the efforts SEKEM makes in the process of "greening" the business practices of its numerous individual companies. An important pillar of this long-term effort is to promote the extensive use of sustainable energy sources. These shall one day replace conventional energy that is still used by the factories today. To achieve this goal, a number of comprehensive experimental test initiatives are required.

Energy use in Egypt today still relies predominantly on fossil fuels such as diesel and others. This is especially true in large-scale industrial production. For instance, it currently costs an average of 30 piastres (4 Euro cents) to transport one cubic meter of process water for use in agriculture by way of a diesel-driven pump. To transport the same quantity of water by way of a pump that is powered by solar energy, however, weighs in at around 6 cents. Renewable energies



Students learn new skills on instruction by SEKEM experts and through working on a demonstration plant.

obviously have to become cheaper and more widely accessible.

The goal of a new PPP project SEKEM has taken up with the German DEG in January 2013 is to tackle exactly these issues and develop the photovoltaic market in Egypt by providing technical systems to stimulate the private sector and by anchoring application-oriented knowledge of solar technology in local education systems. In this project, the SEKEM Holding is working with several partners in a large consortium.

Partners

The Heliopolis University for Sustainable Development is among those that benefit directly from a demonstration system constructed during the project. The institution will be able to launch a solar research unit in the process. The SEKEM Vocational Training Centre (VTC) will be among the educational institutions that will be able to use a new teaching curriculum to train students in the development of solar technology and help it spread.

The JUWI AG from Germany is a developer and designer of solar power plants and a contractor in the project. E-Green participates as an Egyptian partner company contributing as a supplier, installer and service representative for the maintenance of renewable energy equipment.

In the period between November 2013 and March 2014 the German Aschoff Solar GmbH also participated in the development of a partner project in the course of which it helped to develop solar-powered pumping systems for the irrigation of agricultural land.

Objectives

The objectives of the two-year PPP venture, which represents a collaborative effort of private companies and the German state, will be achieved through a series of activities to be gradually carried out over the course of the entire project period. Firstly, five grid-connected photovoltaic demonstration plants will be built with Egyptian and European components. This will be followed by the construction of a photovoltaic test installation and laboratory at the Heliopolis University. The topic "photovoltaic energy generation" will then be integrated into relevant teaching curricula at the institution. Finally, business models will be developed that shall enable actors in the Egyptian market for photovoltaics to expand more quickly, promoting awareness on the topic in the public, and create more favourable insurance conditions.

The photovoltaic systems and the laboratory have already been in use since summer 2014. In addition, educational activities for the students at the Heliopolis University as well as public information and training sessions have already been conducted to build awareness. Moreover, the integration of teaching material into the curriculum of the Heliopolis University has already reached an advanced stage and the first strategic partnerships have already been closed. The upcoming thorough analysis of existing actors in the Egyptian market for off-grid photovoltaic systems and the selection of a company that will carry out a pilot project for the development of a basic business model in Egypt represent major next steps forward in the progress of the initiative.

Initially, three grid-connected demonstration plants were built making use of different photovoltaic modules with a capacity of 4.8 kWh. The plants were constructed at the technical Faculty of the Heliopolis University. An additional module (thin-film technology) is kept in storage for training purposes.

The new solar energy laboratory at the Heliopolis University is equipped

with sensors measuring wind speed and ambient temperature. It also features a meteorological station with pyranometer, which can provide all the necessary data to be later used for operational and educational purposes.

The first training programme on the use of photovoltaic technology directed at both students and instructors alike has also already been carried out at the institution. Integration into other courses of the curriculum is planned for the near future.

Last January, a professional workshop was carried out at the university on the topic of "agrophotovoltaics" – the use of photovoltaic technology in agriculture. In addition, SEKEM participated actively in the "RASEED Conference" in March 2013 that provided a variety of stakeholders in the energy sector in Egypt with an opportunity to discuss the future of photovoltaics in the country and share common experiences. In a work group Helmy Abouleish aimed to provide participants with new perspectives on green energy sources and the opportunities they present to farmers.

One of the next tasks on the project plan to be carried out is a close examination of photovoltaic technology providers in Egypt in the market segment of off-grid solar irrigation pumps, the selection of strong technology partners from Germany and then the development of a pilot project for a photovoltaic solar pump system to be used on the main SEKEM farm.

The Future

For the Heliopolis University, the construction of the demonstration plant and laboratory represent an important step towards the establishment of a dedicated research unit. The SEKEM companies wish to put the new technologies to good use on their own farms as soon as possible. Funding has already been secured for the continuation of the project and the import of technology from Europe is already being prepared with the German partner Aschoff GmbH. New results in the project are expected for the coming November. SEKEM Insight will continue to cover the project.

SEKEM YOU CAN VISIT SEKEM YOURSELF:
WWW.SEKEM-REISEN.DE

Bijan Kafi, Maximilian Abouleish

Impressions from SEKEM



All timber that is being used in Egypt usually has been imported from Scandinavia. Two years ago, SEKEM for the first time considered the idea of itself producing timber from endemic tree species. The Austrian carpenter Alfred Hofer joined the team and the idea quickly matured into a real project.

On SEKEM's farms many trees have been planted as windbreaks and providers of shade since the early days of the initiative. Trees can lower the temperature in their shadow by about 10° centigrade. That is a lot considering summer peak temperatures of

about 45°! These trees traditionally include Casuarina and Eucalyptus trees – both very fast-growing species (1-2 m per year). However, they do require a lot of water, a scarce resource in dry Egypt. The wood of eucalyptus trees is very hard and is normally only used for pallets or rafters. It is also important to respect the correct time for felling in winter and ensure proper storage conditions. Only then can one produce good timber out of these kinds of trees and other indigenous species.

This year marks the first time SEKEM has actually produced its own timber. The new school chairs were manufactured from it. This step represents a significant move towards greater sustainability in the way the farm is run. Convinced of the idea, SEKEM will now start with professional small-scale timber production. Once trials concerning the processing of the wood are completed, SEKEM will begin with tests which of these species grow best in Egypt. Melia (Persian Lilac) needs 10 years until the trees are mature, Casuarina and Eucalyptus need 15-20 years. One open question is, which type of wood is best suited to which purpose (e.g. furniture) or if a particular variety exhibits further advantages in growth or storage. Possible candidates also include Swietenia Mahogany and Tamarix Erecta.

SEKEM has been cultivating Persian Lilac also for many years because of its close similarity to the Neem tree which produces a natural insecticide. At first, Neem could not be directly imported from India. The tree remains unaffected by insects due to its Azedarachtin content. Its wood is softer than that of the others and can therefore also be used for manual carving, for example in handicraft classes.

In Egypt this field has so far been neglected entirely in terms of commercial and ecological use. SEKEM wishes to change that – and improve bio-diversity along the way!

Angela Hofmann

15th Anniversary of Interfaith Youth Work at SEKEM



The students from the Association of the Jesuits in Minya during their trip to SEKEM.

For many years it has been customary in SEKEM to receive groups of young people from the Christian Jesuit Association of the Upper Egyptian city of Minya to the farm. This year marks the 15th anniversary of the project, which is dedicated to fostering cultural exchange and promote understanding and tolerance among the prominent religions of Egypt. The last groups visited SEKEM in early August.

SEKEM is always visited by two independent groups. They either consist of male and female students or pupils of grades 7-12. Many participate in programmes comparable to those of the boy scouts. The 20-30 participants bring their own equipment to the SEKEM main farm and then camp outside on the grounds for 3 days or so. They also engage themselves in community work for one of the charitable institutions of the initiative.

These visits are part of the education programmes on offer by the Jesuits of Minya to the local youth. The students, who are generally aged 19-21, engage themselves with great dedication and take part in all of the activities in their own spare time.

The groups consist entirely of representatives of the Christian faith and are brought to SEKEM by the Christian organisation who also operates a church and a monastery in Egypt and trains Egyptian clerics with the support of some European priests. The association of the Jesuits in Minya is a very active

group who continues to reach out to other organisations to organise training workshops for adult education and stimulate groups to engage in social work in the surrounding villages of the region. These offers apply without distinction to Muslims and Christians. The various church institutions in Egypt – Jesuits, Franciscans etc. – have been active in Egypt since the 19th century and all of them continue to make a great contribution to intercultural understanding in the country.

For SEKEM's co-workers these visits and exchanges do not only have an educational or sentimental value, but are also of great symbolic importance. They symbolize the commitment of a large number of young and older people for a better understanding of the religions in their country. Representatives from SEKEM have therefore also visited the association's own premises in Minya in the past.

Originally, the Dutch Father Francis had met a representative from SEKEM several years ago and begun to organize the visits by his students. He always accompanied the young people to SEKEM until he was transferred to another post. However, his successors continued the initiative.

The two groups of students and pupils who visited SEKEM recently worked to embellish the SEKEM School. They took care of the completion of a new fence on the premises of the kindergarten and also assisted in the construction of school furniture (chairs, tables etc.) in collaboration with the teachers of the school. Afterwards, they were given an introduction to the ideals and projects of SEKEM by the staff of the SEKEM School and could then participate in artistic courses offered by them.

At the end of their trip, all participants also attended a personal invitation of Dr. Ibrahim Abouleish to the grounds of the Heliopolis University in Cairo. Maybe, one day, the new university will also receive some of its students from Minya.

Bijan Kafi, Rafik Costandi

Education for Sustainable Development: SEKEM Takes Part in Conference

To promote sustainable development, political arrangements and financial incentives are not enough. A fundamental change in the way people think and act is also needed. This goal is addressed by a new field named "Education for Sustainable Agriculture". The world conference of its practitioners is held this year with the participation of Dr. Ibrahim Abouleish. He joins the participants on behalf of SEKEM and will contribute a workshop on nutrition security and sustainable agriculture.

Education for Sustainable Development aims to provide learners with the skills allowing them to design a sustainable future on their own. To achieve this goal, most of the necessary participatory teaching and learning methods that enable learners to develop methods and instruments for sustainable development still need to be developed. To share their best practice is the goal bringing the participants together at the event.

An online platform will be launched in advance of the conference to enable everyone not able to attend the event to inform themselves on the topic and to get involved virtually.

Source: UNESCO

! More information:
<http://www.unesco.org/new/en/unesco-world-conference-on-esd-2014>



Masthead:
 The editors of SEKEM Insight wish to thank all contributors to this issue.

Editor:
 Bijan Kafi, Christina Anlauf

Contact:
 SEKEM-Insight
 c/o SEKEM Holding
 P.O.Box 2834, El Horreya,
 Heliopolis, Cairo, Egypt
insight@SEKEM.com

Pictures:
 4: SEKEM

No republication without written consent by the publisher.