



## Opex Egypt Chapter May 2017 Meeting

### Energy Efficiency and Renewable Energy

#### Agenda

Introduction  
Energy Global Split  
Energy in Egypt  
The Great Energy Challenge  
Population Growth and Energy  
Energy and Environment  
Energy and Economy  
Energy and Society  
Barriers to Energy Efficiency Implementation  
The Great Opportunity  
Demand Side Energy Efficiency  
Supply Side Energy Efficiency (Renewable Energy Resources)  
Conclusion

This was a very rich topic and Eng. Monsef gave a very comprehensive presentation that we will try to summarize and shed some light on most important parts of it.

He started his session by correcting the misconception of generating power that in fact, should be power transformation as energy is transformed from its initial status to the final status in the form we use. For example, natural gas is transformed into electric power in power generating plants.

#### Forms of Energy

There are many forms of energy, but they all fall into two categories - Potential or Kinetic

He compared energy consumption levels worldwide to those of Egypt's. We found that globally 33% of energy is consumed in industrial sectors

however; in Egypt the highest % of energy consumption is consumed in residential facilities which is significant and don't generate revenue as in industrial purposes.

#### The Energy Challenge

Meet energy demand of a growing global population

- Ensure stable and secure energy access for all nations
- Bring electricity to the 1.6 billion people without access
- Stabilize climate impact from energy emissions
- Establish sensible legislation allowing business to grow in an effective and socially responsible manner

**Ensuring Energy Availability while preserving the Environment**

#### 4 Monitor and Improve



About Speaker:

Eng. Shady Monsef, Plant Manager at Serioplast, Arab Academy for Science,

#### Barriers to Energy Efficiency Implementation

- Lack of awareness and perceived risks
- Conflict of investment priorities
- Lack of Benchmarking (Best Practices)
- Absence of regulating pressures

#### Just follow the 4 Energy Efficiency steps

- 1 Measure
- 2 Fix the basics
- 3 Automate



Another important issue is that **Energy goes hand in hand with Environment sustainability**. It's unfortunate that still no special curriculum on Energy incorporated in Egyptian Faculty of Engineering curriculums. Egypt has been blessed by many sources of renewable energy as wind and solar energy in addition to traditional forms of energy as oil and gas. Recent gas discoveries in Egypt are good for its economy no doubt, however Egypt needs to take serious measures in exploiting and encouraging investments in solar energy and other renewable energy sources. In cooperation with the Euro Bank, industrial sector has been receiving grants to adopt power saving endeavors and maintain safety and environmental standards.

As houses, commercial malls in residential areas consume the largest portion, many attempts were taken to draw attention to reduce energy consumption for example in electricity, citizens were encouraged to change electric bulbs into LED bulbs, new residential areas to adopt solar cells installation and similar to that new plants are requested to use solar feeding system in addition to the regular electric supply.

Our audience as usual, was interactive and we had the pleasure of hosting some new members working on transforming their plants into green plants. They had a lot of questions on the importance of having a separate meter on each production line to measure the consumption on frequent intervals. As the rule of thumb, "what you can measure you can improve".

The whole world is moving into making smart homes, offices and plants where sensor of motions are installed to allow power cut off, upon leaving the office etc.. Usage of dimmers, sky lights etc.. are all efforts to reduce consumption.

### **Renewable Energy: Energy Sources that can replenish themselves.**

Why Renewables?

- Do not deplete natural resources
- Global warming is minimized using renewable energy sources
- Effective method to reduce CO<sub>2</sub>emissions
- Guarantee Energy security for countries deploying it
- Legislation being passed making renewables more attractive



### Types of Renewable Energy:

Solar, Wind, Biomass that Energy is released by combustion (burning), Nuclear which radiations can produce electricity, Hydroelectric as in electricity generated by the High Dam in Aswan, Upper Egypt.

Eng. Monsef highlighted pros and cons of using each energy and shed the light on recent Mega Projects taking place in Egypt in this field as the BENBAN 1.8GW SOLAR PARK, EGYPT.



### Eng. Monsef concluded his presentation by a summary of the following points:

- Energy Conservation is the practice of decreasing the quantity of energy used while achieving similar outcome of energy used.
- Energy Conservation saves the need for many power plants and fuel imports
- Energy Efficiency refers to the products/Systems using less energy to do the same or better job than conventional products/systems
- Energy efficiency saves money on utility bills, reduces CO2 Emissions and helps protect the environment for generations to come.
- Human Activity, Primarily burning fossil fuels, is the major driving factor in Global warming
- Global Warming can be slowed, and even stopped, with practical actions that yield a cleaner healthier atmosphere
- The renewable energy sources are cost effective, User-Friendly so, they can replace the fossil fuels
- By promoting renewable energy sources we can avoid Air Pollution, Soil pollution and save aquarium lives.
- Renewable Energy Sources significantly Improves country's Economy



#### OPEX Society Egypt Chapter News:

Our coming meeting will be in July 2017 following the holy month of Ramadan.

We're starting arranging for our October 2017 Conference.... Stay Tuned

*We have been honored to have new participants from Yemen whom actively participated in the session as well as new joiners from Architecture Field.*