

Success Story

Benchmarking for Policy Making

The UNIDO Industrial Energy Efficiency Project (IEE) in Egypt has completed one of its main project activities; providing a broad picture on energy efficiency by benchmarking the energy consumption of three energy intensive industrial sectors: Fertilizer, Cement and Iron and Steel. In close cooperation with the Industrial Development Authority (IDA) and under the supervision of the Austrian Energy Agency, UNIDO experts first-handedly collected various sector data such as energy consumption, production levels, energy management and production practices for three consecutive years from participating industries. For the first time, there are now reliable and verifiable figures regarding energy consumption in Egypt that can be used in decision and policy making.



Energy Consumption in Egypt

The industrial sector currently consumes about 45% of national energy consumption. To confront the energy crisis and climate change, the optimal and efficient use of energy resources in Egyptian industries is one of the most important areas that require policy making prioritized in Egypt's 2030 Sustainable Development Strategy. The UNIDO Representative and Head of the Regional Office, Giovanna Ceglie, said that priorities are "not about increasing the production of energy sources or diversifying energy sources, but are about using energy better; using it in the optimal way." Through efficiency measures, energy intensive industries can save up to 20% of energy consumption, making it the cheapest energy resource, as there are lots of strategies that can be implemented that do not require big investments.



Benchmarking Aims

By comparing the performance of individual plants, the benchmarking studies:

1. Recognize best practice
2. Assess performance against local sector competitors
3. Assess performance against international competitors

The benchmarking is not limited to data collection and analysis, but includes the development of benchmarking curves and generates future projections based on different scenarios, which forecast the potential energy requirements and consumption of the sectors based on energy efficiency measures adopted. These forecasts are critical for policy making as well as for the formulation of technical support programs, thus setting a foundation for putting industries in the direction of energy efficiency.

The Way Forward

The benchmarking study is expected to support decision makers when adopting new policies regarding industrial energy efficiency, contribute to international competitiveness and play a critical role in the development of Sectors Road Maps towards the improved energy efficiency of these three sectors. Only through combined efforts to develop sound policies with the support of all stakeholders such as decision makers and factory owners, can Egypt's energy shift from critical to efficient.

Methodology

Careful planning was carried out by IEE; tailoring the UNIDO benchmarking methodology to the Egyptian context and defining the scope and system boundaries of the research. The data collection process was carried out in cooperation with the IDA, which provided UNIDO experts with national statistics. Moreover, surveys, sessions and meetings were carried out with 26 participating plants, who worked with UNIDO experts on collecting three years worth of data. The plants were closely involved in the verification of the data to ensure the homogeneity and accuracy of the results. UNIDO experts and consultants analyzed the results, calculated potential savings for the participating plants, and applied various correction factors into account.

Benchmarking Facts and Figures

Sector	Number of Plants Analyzed	Total Sector Energy Saving Potential
Cement	11	52 PJ/a
Fertilizer	5	36.5 PJ/a
Iron and Steel	8	11 PJ/a

Based on the scenario where the whole sector reaches Best Available Technology (BAT) performance levels by the year 2050

Sustainability

The IDA is responsible for the implementation of industrial policies and will be actively involved in the application and practice of the benchmarking results. The Egyptian National Cleaner Production Center (ENCPC), a Ministry of Trade and Industry agency, aims to carry out similar benchmarking studies beyond these three sectors, starting with the Egyptian ceramics industry. As stated by Ali Abo Sena, the Director of ENCPC, "we need to understand our current consumption in order to pinpoint problems and improve technology and efficiency accordingly." ENCPC staff will receive training on the UNIDO methodology of work from national experts who participated in the benchmarking for other sectors, who will also be involved in managing the implementation of the study.



Factory Owners and Decision Makers

One of the participating plant representatives said that "the benchmarking has rung the bell and given us a wake-up call. We are 10-50% below international best practices in energy consumption and yet we use the same technology, which makes no sense. We need to practice efficiency."

Results

Based on international benchmarks, there is a wide room for improvement in energy efficiency performance for the Egyptian industrial sector. The results of the benchmarking indicate that although some of the participating plants do not differ in energy efficiency from their international counterparts, there is room for improvement.

Find the benchmarking reports for the Fertilizer, Cement and Iron and Steel sectors at the following link:
<http://ieegypt.org/index.php/2014-04-30-10-12-02/manuals>