AGI ENERGY SERVICE CENTRE
Sustainable Energy for Profitability

PHARMACEUTICAL INDUSTRIES CAN REDUCE THEIR ENERGY CONSUMPTION WHILE IMPROVING THEIR PRODUCTIVITY AND THEIR ENVIRONMENT

Pharmaceutical industries consume a lot of energy to ensure that their health products meet a very high level of quality and safety standards. Most of their day-to-day concern is how to maintain a safe environment while improving their productivity. In addition, their buildings have a large performance variations. So, **how can the pharmaceutical industries reduce their energy consumption and be more competitive?**

Industrial boiler units installed in a Pharmaceutical plant

Pneumatic systems installed in a Pharmaceutical plant

01 Specific energy efficieny actions for pharmaceutical industries

The Pharmaceutical industries need to maintain critical environments for production with respect to temperature, humidity, room pressurization, cleanliness containment, and other contributing factors. The average Energy Usage Intensity (EUI) of the pharmaceutic industry is around 3,819 kWh/m2 while the average commercial buildings consumption is only 257 kWh/m2*. The table on the next page shows the main energy consuming equipment in pharmaceutical industries, the uses to which these equipment are put to, and the energy efficiency actions associated with each of the identified equipment.

* Source: Boyd, GA, Development of a Performance-based Industrial Energy Efficiency Indicator for Pharmaceutical Manufacturing Plants, http://www.energystar.gov/ia/business/industry/infocus/Pharmacuetical_EPI_documentation.pdf o1de-0ecc, Table 5, Accessed June 28, 2013.

S/N	TYPE OF EQUIPMENT	USES	POSSIBLE ENERGY EFFICIENCY ACTIONS
1.	Motors	Grinding of medicinal constituents, ventilation and air conditioning building systems	General energy efficiency actions relating to motors including high-efficiency motors and variable speed drives.
2.	Pumps	Driving fluids through different process stages and potable and waste water pumps	General energy efficiency actions relating to the selection of suitable and efficient pumps and use of the best efficient points.
3.	Boilers	Generating hot water	Solar water heaters and general energy efficiency actions relating to improving the boilers and the distribution networks' efficiency.
4.	Chillers	Providing cooling / cold water solutions for the manufacturing processes.	General energy efficiency actions relating to water or air chiller systems.
5.	Air conditioning systems	Providing air conditioning solutions for some manufacturing processes & comfort cooling.	General energy efficiency actions relating to single and centralized air conditioning units including variable refrigerant volume and hybrid – electrically & solar - operated air conditioning units.
6.	Pneumatic systems	Providing fluid pressure solutions for the manufacturing processes and the system controls.	General energy efficiency actions relating to pneumatic systems including leakage reduction solutions.

02 Energy audit

Significant reductions cannot be achieved unless the process itself is analyzed, challenged, and optimized.

Doing an energy audit is a task that requires significant expertise and knowledge regarding the regulatory and the requirements of the manufacturing processes. Maintaining the environment to ensure product integrity and operating personnel protection and comfort are crucial factors that must be accommodated when making any changes to the process to save energy.

03 Conclusion

Pharmaceutical companies need to implement energy efficiency measures in their operations, to benefit from reduced energy consumption and increased profitability. The cost of performing an energy audit will be easily offset by the implementation of low and no-cost measures that an expert can identify in collaborating with the plant engineers. As added advantage, the CO_2 reduction will provide to the industry a green image that can attract potential talents that are interested in the environmental policies of the company. Green marketing can also improve access to finance, relationships with decision makers and local communities, giving a competitive edge to the industry.

For additional information on this opportunity, please contact:

AGI Association of Ghana Industries
german cooperation DEUTSCHE ZUSAMMENARBEIT
Implemented by: giz
+233 507 977 902
info.esc@agighana.org
www.esc.agighana.org
AGI Energy Service Centre
@agi_energy