For the complex multistage process industry, energy costs contribute substantially to the total manufacturing costs. During the recent years, initiatives have been set up in many companies to reduce energy costs and decrease CO2 emissions. Once improvement measures are determined, a big challenge is to keep the energy consumption sustainably at a low level. Therefore, a comprehensive energy efficiency program consists of two stages. The objective of the first stage is to identify measures that reduce the energy consumption. For this task, a set of analysis tools within a systematic procedure is employed. The second stage involves the sustainable implementation of the previously proposed measures.

In this lecture, a structured energy efficiency management system will be presented, which allows the measurement and tracking of energy efficiency in chemical production units. It provides transparency about the status quo of a plant and the further improvement potential.