

The most frequent function performed by Ultramax® is *[fine-tuning adjustments of an existing process to optimize its operating performance as evaluated by the user's criterion based on operating metrics.](#)*

A balanced approach to attain **Energy Conservation competency** is: *optimize operations [while including a penalty for energy consumption](#) – such as approximate purchase and impact costs. This results in **avoiding energy waste by consuming just the energy necessary to achieve requirements and objectives.** This is **Energy Conservation** without capital expenses, using existing equipment and controls. Further improvements may be possible with *[Dynamic Optimization](#)*: ongoing re-adjustments for imposed changes in materials and demand conditions.*

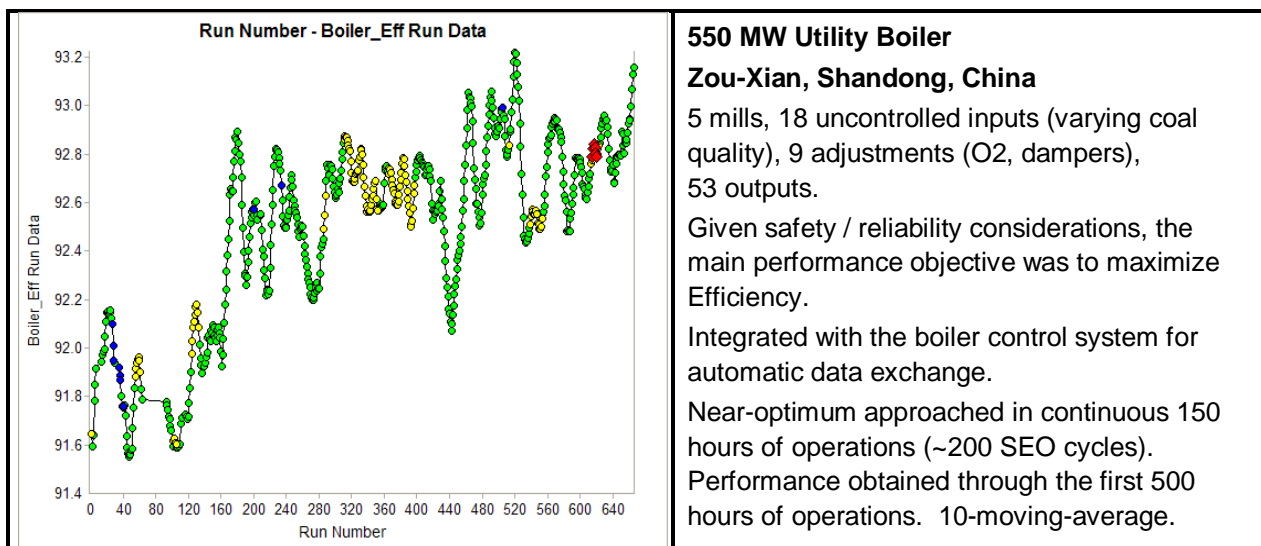
So, in addition to contributing to energy conservation, sustainability, and reducing carbon footprint, **Ultramax** simultaneously improves the balance of the other performance metrics. For this objective nothing compares with **Ultramax** in **thoroughness, speed, safety** and **simplicity**. In production processes users often start getting benefits within 100 hours of operations. For more details see www.ultramax.com/Ultramax_Summary.pdf. The Ultramax Method and Software are broadly applicable, and the analytics fully automatic for all systems, processes and industries.

Ultramax does *[Quantitative ongoing learning from experience how to do better™](#)* by using Sequential Empirical Optimization (SEO), starting from your best known set of process adjustments and its consequent operations as you measure it.

Ultramax supports three approaches to energy conservation: (1) *Forced Optimization* (optimizing performance with constrained energy usage); (2) *Pareto Optimization* (minimizing energy usage satisfying other constrained performance metrics); and (3) *Inclusive Optimization* (the penalty approach described above). These approaches are explained in further detail in the answers to Question #2 of: www.ultramax.com/FAQ.pdf. The same approaches apply to the reduction in **the use** of other resources, such as **water, raw materials, machine time and costs in general**, and reduction in **environmental impact** (*emissions, disposing of certain materials, etc.*).

Sensitivity Analysis calculates potential operating improvements by relaxing constraints (reducing requirements or increasing capacity) and by better control or sensors, which help engineers identify **redesign** projects with high ROI.

An example of energy conservation in paper making is shown in www.ultramax.com/Applications/Paper_Energy.pdf, with Sensitivity Analysis. An example of fuel savings/efficiency in power generation is illustrated in the chart below.



UMC and its Agencies world-wide look forward to partnering with you in enhancing the effectiveness and value of your processes, products and personnel. We enable you to experience the possible improvements by providing you the right software, training, guidance and support. We offer a no-cost evaluation of applicability. Except for travel costs, annual 100% ROI is guaranteed if you evaluate benefits in economic terms and we estimate sufficient potential.

Ultramax Corporation (UMC): www.ultramax.com.

Contact: ultramax@ultramax.com , or Dr. Carlos W. Moreno, Cincinnati, OH, USA +1 513 469-8629