# ENERGY MANAGEMENT VS. ENERGY CONSERVATION

## The Challenge

There is a common misconception within industry that views reduced energy consumption as an “Energy Conservation Program,” rather than an “Energy Management Process”. It is easy to conserve energy by turning off equipment or shutting down processes, but the obvious consequence of this is a reduction in plant production. Managing energy will ensure you can keep those processes running and still save money on energy expenses.

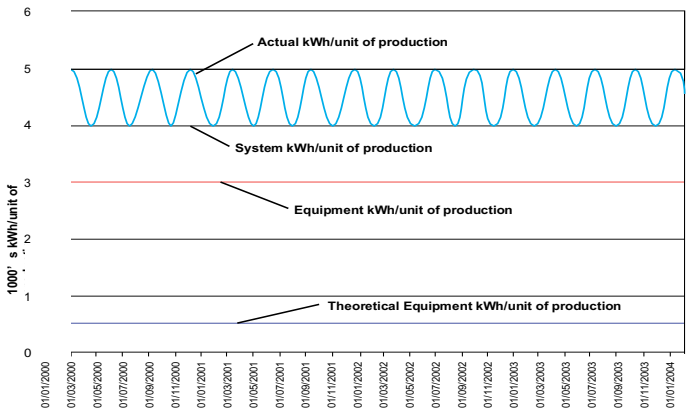
Rather than turning things off to save energy, organizations need better energy management in the production of their goods or services so they consume the absolute minimum number of kWHrs. However, as with any cost reduction plan, the success of an Energy Management Process is dependent on all stakeholders, from the views of board members to implementation in the plant.

## The Solution

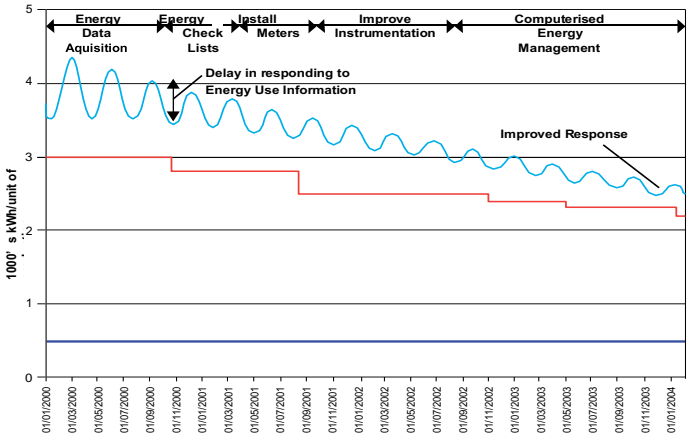
The Evolution of a Monitoring and Reporting System (MRS)

The phrase Energy Management accurately describes the objective of minimizing the cost of electricity per unit of production. An Energy Management Process will evolve as the facts about how and where energy is used are discovered and shared with employees. As this process continues, the role of each individual

**No Energy Management Process**




**With an Energy Management Process**




will be defined and targets can be set. This natural evolution can be enabled and aided by establishing a logical and straightforward Monitoring and Reporting System (MRS).

As information is obtained, improvements can be made, resulting in actual gains. Long-term changes to operating practices will inevitably be necessary, as will the procurement and installation of more energy-efficient equipment. Care should be taken to ensure that the benefits of these changes are not lost through neglect or employees returning to old ways of doing things.

Dramatic savings can be made in a relatively short time when an Energy Management Process with a Monitoring and Reporting System is in place.

The benefits of developing a Monitoring and Reporting System, complying with its principles and following guidelines (Energy Management) can be seen in the two graphs above. Dramatic savings can be made in a relatively short time.

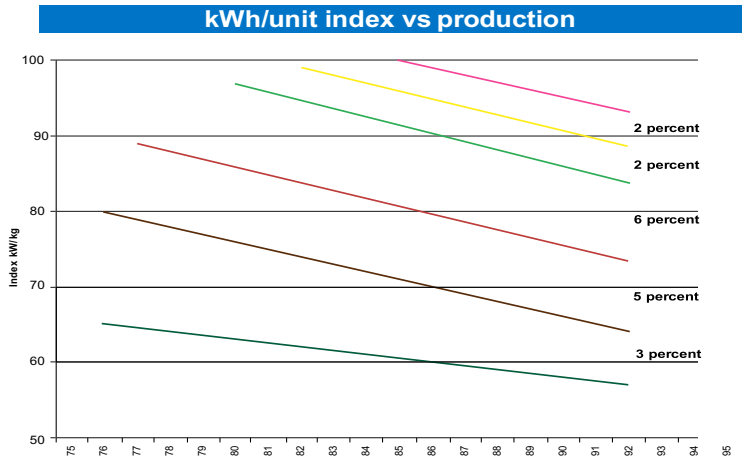
As shown in the graph on the left, when there is no Energy Management Process with Monitoring and Reporting System in place, the actual amount of energy used only varies as a reaction to the electricity bill; energy conservation. Essentially, energy consumption remains constantly high over time.

With an Energy Management Process and MRS in place, actual kWh/unit of production decreases. The kWh/unit of production figure in the graph on the right drops as a direct result of the measures taken. This typically includes:

- Improvements in monitoring techniques
- Adding higher efficiency plant and control systems

- The development of accounting systems
- The installation of computer control

Improvement in energy use is illustrated by plotting kWh/unit of production versus production. After all plant loads have been surveyed, the amount of energy allowed per unit of production should be determined. This amount may be in tons of steel, pairs of shoes, board length of timber, square meters of carpet, liters of paint, packets of frozen peas, etc.




With an Energy Management Process and MRS in place, actual kWh/unit of production decreases.

**CONSIDER USING**

The Fluke 437 Series II

Developing an Energy Management Process and MRS requires the acquisition of reliable and accurate data detailing how energy is being used, with comparisons showing where improvements have been made. The Fluke 437 Series II is the ideal instrument for this task. This highly capable power quality and energy analyzer is ideal for long-term analysis and load studies, uncovering intermittent issues and determining the load capacity of systems.


The Fluke 437 Series II is the ideal instrument for acquisition of reliable and accurate data detailing how energy is being used.

Using the Fluke 437 makes it easier to calculate the total cost of energy and identify how much can be attributed to poor power management. It can also be used to assess usage before and after improvements in order to quantify savings.

Specific features include power inverter efficiency measurement through the simultaneous measurement of DC input power and AC output power. The built in Energy Loss Calculator uses active and reactive power measurement with quantified unbalanced and harmonic power losses to identify problem areas.

The patented Unified Power Measurement feature of the Fluke 437 Series allows users to accurately calculate how much wasted power is costing you. With the Fluke 437, you can develop your Energy Management Process and MRS quickly and start saving immediately.

# About Electro Rent Services

Electro Rent helps companies acquire, optimize, and maximize use of the equipment they need, saving time and money at every stage. Our programs offer users the flexibility to access the right instruments at the right time—for as long as they need them and no more.

With these programs, cost of ownership stays under control and engineers always have access to the latest equipment, making technological obsolescence is a thing of the past. Our services range from rent, lease, and buy, to used equipment, certified pre-owned, and a variety of flexible financing options.

Other services include calibration and repair, asset auditing and tracking, and asset management, which provides ireal-time feedback on your CapEx and OpEx investments. With more than 100,000 products, we have the right solution for you.

To learn more, contact us today at **1.800.553.2255** or email **sales@electrorent.com**. Our experts are available to assist with your product testing and financing needs.