From a business perspective, Return on Investment (ROI) is perhaps one of the best ways to justify a purchasing decision. If you can demonstrate a measurable benefit, customers will be more interested in your solutions.

Sometimes recognizing the benefits requires a new mindset. For power generation customers, it often means equating “negawatts” (electricity saved) with “megawatts” (electricity generated).

It takes a lot of electricity to run a power plant. From water treatment through fuel preparation to lighting and air conditioning systems, auxiliary power consumption can account for between 4 and 15 percent of a power plant’s entire output. Without these systems, the plant won’t run, but every watt of electricity saved by improving their efficiency can be sold to generate higher revenues.
This is where energy efficiency can help. By dovetailing advanced electrical and automation systems, power plants can significantly improve their efficiency. By carrying out a thorough assessment of a plant’s performance in terms of energy efficiency, problems can be identified and solutions found. The cost of the assessment is generally a tiny fraction of the savings that could be achieved. Experts can help customers tap into savings that are hiding in plain sight, by optimizing the performance of auxiliary systems.

By improving the efficiency of a single auxiliary function, the energy consumption of an existing facility can be reduced by up to 10 percent. Added together – system by system, saving by saving – the reductions in energy consumption and associated CO₂ emissions can be considerable. Optimization also improves output and availability, along with equipment and system reliability.

Looking at a real-life example might help to crystalize the significance of these savings. In a recent case, the efficiency of a 25-year-old, 500 MW coal-fired power plant was increased by 8 percent. This equated to an annual saving of 155,000 tons of coal, which could then be diverted to power generation applications. The improvements also helped reduce CO₂ emissions by 260,000 tons.

Energy efficient solutions literally pay for themselves. The more they are deployed, the faster the payback. Power plant operators can see the payback potential of the solutions before committing to them, and also monitor the savings as they happen.

Of course, energy efficiency solutions do cost money to install, but many plant operators are already paying that price through system inefficiencies. Realizing the benefits and the relatively short payback times of energy efficient solutions can help raise the performance of power plants, both financially and environmentally.

Increasing the efficiency of a coal-fired power plant for instance is one of the most effective and economical ways of strengthening power supply. Using less coal to generate the same amount of electricity, saves resources and reduces harmful emissions.

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**About the author**

I am the Energy Efficiency Manager for ABB’s Power Systems division in Italy. I have more than 10 years of experience in power plant engineering design, operation and maintenance. The everyday rhythm of modern life is pushing us to act faster, produce more, and perform better. But if we stop and consider the efficiency of the process we are trying to run faster, we might just see that “faster” is not the answer. “More efficient” could easily bring the same rewards for the bottom line, and the environment will also thank us!