

INBALANCE POWER SOLUTIONS OVERVIEW:

Introduction

Up to 25% or more of billed electricity in a facility is unusable and essentially wasted. Facility electrical systems are composed of many individual bits and pieces – wires, bus bars, switches, circuit breakers, motor starters, transformers, plugs, receptacles, lighting and many, many more. These components work together to conduct the electrical current demanded by the building's many electrical loads. As electricity passes through these devices, inefficiencies in electrical systems cause these components to create line loss and emit wasteful (and sometimes harmful) heat. Furthermore, most AC induction motors in facilities only operate at 80% efficiency under a full load. This type of waste can comprise 5% to 25% of total electricity demand. Older, poorly designed or extremely complex electrical systems may show heating losses of more than 25%, which equates to waste and higher electricity bills. The electricity savings from power treatment technologies originate from the concept of Power Factor Correction.

What is Power Factor?

- Power Factor involves the relationship between two types of power:
 - Working Power and Reactive Power

- Most loads in electrical distribution systems are inductive. Inductive loads require two kinds of current:
 - Working Power—performs actual work of creating heat, light, motion, etc.
 - Reactive Power—sustains the electromagnetic field that is needed to run a motor

- **Power Factor is the measure of how effectively electrical power is being used**

*To learn more about Power Factor, an excellent explanation is available at <http://www.the-power-factor-site.com/index.html>

INBALANCE introduces specifically designed and engineered energy conservation solutions which reduce the amount of non-productive current in an existing electrical system, resulting in a significant reduction in power consumption costs. Our power quality solutions are guaranteed to decrease energy expenses and consumption, improve electrical distribution, and extend the useful life of existing building and manufacturing equipment. The approach that we take to gain electricity efficiency in existing facilities is to install power treatment technologies to the individual loads in a facility and, where needed, to install passive or active power quality correction at either individual loads, individual branch circuits, or the master service entrance.



Power Quality Improvements / Technological Benefits:

- Power and cost savings are immediate
- Increases the electrical capacity of facility
- Increases efficiency of electrical distribution system and equipment
- Increase power factor & power quality
- Improves cooling capacity of air conditioning and refrigeration
- Maintains quality voltage levels with less voltage drops especially on long runs of cable
- Motors run cooler, more efficient & increases life expectancy of equipment
- Reduces maintenance expense and replacement costs
- Eliminates voltage surges and transients
- Passive Technology (no cycling of loads)
- Maintenance Free - Functions automatically (requiring no staff involvement)
- Installation is fast, simple and creates no disruption to facility operations

Savings:

No matter what type of business, manufacturing, office building, large scale retail, our passive power quality solutions can save from 10 - 25% on electricity bills and dramatically lower cost of maintenance, repair, and replacement of fixtures and equipment. Even with so called "efficient" buildings that have already achieved EnergyStar or LEED Certification, we have been able to achieve additional electrical cost savings of up to 10%.

Insured Guarantee:

Our fiscally responsible approach to energy conservation significantly increases NOI by reducing energy consumption and improving the performance of existing equipment. The average, guaranteed, payback period for our energy conservation solutions is less than 3 years. The simple ROI, after tax consideration etc. consistently ranges between 30-50%. We **guarantee** our projected financial savings and payback period for each engineered project with an insured ROI that is underwritten and endorsed by an 'A'-rated carrier - Lloyds of London, while the products that we utilize are backed by a 10 year warrantee.

Lease/Purchasing & Financing:

Some of our clients are concerned about making an initial capital investment, and would prefer to pay for such improvements over time, out of additional operating capital that is made available from the savings produced by our solutions. These projects are perfect for lease/purchasing, or financing. If our clients qualify, leasing can be an extremely convenient way to get started. The investment is minimal, and is usually recovered through the savings in the first month or two. This provides a PROFIT or NET GAIN every month until the lease term expires. When the lease has run its course, 100% of the monthly savings is kept by our client. INBALANCE can arrange the financing if so desired at a competitive rate.



Our Approach:

A comprehensive site survey is conducted, and uses the data from many pieces of existing facility and process related equipment to assess the electrical loading in various building branch circuits. We take electrical measurements and gather information about the entire electrical system layout, including the various electrical panels and transformers. This information is compiled and analyzed to learn the energy and cost savings possible through use of a custom system.

We use our advanced technology to treat:

- All Types of Lighting, Fluorescent, HID, Incandescent.
- Fixed Speed Motors
- Variable Speed Motors
- Air Conditioning Systems including chillers, cooling towers and packaged air handlers
- Refrigeration Equipment
- Compressors
- Manufacturing Equipment
- Electronic and Office Equipment

Process for Evaluation:

We will take a facility-wide approach to designing and installing its custom energy savings and power quality improvement systems. They begin by analyzing the entire facility's electrical distribution and power quality. They then design a custom system that makes individual components more efficient, with a focus on eliminating waste without causing reduced equipment efficiency

Once the facility's savings potential is assessed, we co-design a custom system to address energy usage efficiency and power quality issues. Each system is developed using:

- a detailed engineered analysis of the facility's unique energy load breakdown
- a power quality review
- an understanding of financial goals

Installation:

Once the system is engineered and manufactured, INBALANCE installs the entire custom system with little impact on the facility's operations. The systems do not require removal or replacement of existing equipment. Typically, minimal downtime is needed to install the system. After a system is in place, no routine maintenance is required.



Measurement Tools for Return on Investment (ROI) Calculations:

To ensure the delivery the guaranteed energy savings, we measure and verify performance using methods in compliance with the International Performance Measurement and Verification Protocol (IPMVP). The IPMVP was established by a network of energy professional and organizations from more than 25 countries. It standardizes the methods by which energy conservation projects are measured and verified. We will work with you to establish a clear understanding of our IPMVP-based measurement and verification tools prior to installing a project.

Differentiators:

1. We **guarantee** our projected financial savings and payback period for each engineered project with an insured ROI that is underwritten and endorsed by an 'A'-rated carrier - Lloyds of London
2. Lease/Purchasing & Financing options with competitive rate available to clients
3. Not a one size fits all approach. A customized solution is engineered. Our methodology determines to an exact science how much capacitance is required to optimize each inductive load to unit
4. Solutions and associated products are best in class, engineered and produced in the United States with a 10 year warrantee.
5. Robust Monitoring and Verification process using methods in compliance with the International Performance Measurement and Verification Protocol (IPMVP)
6. A solid reputation with satisfied clients, and thousands of successful projects completed around the world.

