Power generation and distribution utilities are facing the unprecedented challenge of managing peak power demand, without spending billions of dollars for new generating stations (nuclear, coal etc.). This predicament is compounded by the aging electrical infrastructure.

Furthermore, Commercial/Industrial (CI) energy users are faced with more complex pricing models and regulatory initiatives such as demand response. Consequently, companies that are not prepared for these changes will be financially penalized.

Energy Use can be Managed and Controlled

Clearly, increase in electrical power demand is unavoidable; however, it can be controlled and managed with the effective application of modern technology.

The Aysix NetMeter family of products provides CI energy users with real-time power consumption information. Information is presented in an intuitive, visually appealing and easy to understand format on any device with a web browser including smart phones, tablets, laptop/desktop computers and more.

With the simple installation of a number of cost effective Aysix NetMeters, commercial/industrial energy consumers have the tools they need to understand and then reduce their energy consumption and subsequent energy costs.

Reduce Energy Through Managed Change

The Aysix NetMeter system is specifically designed to help CI energy users improve their energy consumption patterns by making them aware of their real-time and historical energy use. This enables effective, verifiable energy reduction strategies to be implemented.

According to the U.S. Department of Energy CI users consume over 70% of electrical generating capacity.

For example, in a large North American metropolitan area, a medium size Industrial or Commercial (medium loads) business that uses 200,000 kWh of electricity per month at a cost of $0.10-0.11 per kWh, with a monthly bill of approximately $22,000, accrues a yearly expenditure of approximately $265,000.

In this example, a 20% energy reduction equates to a $53,000/yr savings! Energy savings of this magnitude are achievable when businesses develop an energy reduction plan based on the insight that the NetMeter products provide.

Even larger businesses can realize greater savings: $600,000 in the case of a large CI user with loads and monthly consumption in the area...
of 2,500,000 kWh at a rate of $0.09 per kWh. Larger businesses can save millions of dollars.

**Aysix** NetMeters enable Energy Auditors to identify, manage and control energy consumption in your business.

**The Real-Time Advantage**

Independent studies\(^1\) have proven that real-time energy feedback is effective in driving energy conservation. Smart meter-based solutions and other smart grid related products today are unable to display real-time data to users. By contrast, the NetMeter has the capability to graphically display updates every second. Users can see immediate changes in their power consumption, such as turning on or off an electrical load (industrial and commercial equipment, big appliances, HVAC, electric motors, lighting, pumps, compressors etc...).

**How it Works**

**The Aysix NetMeter**

**Module**

The **Aysix** NetMeter devices are small modules that utilize the popular DIN rail standard for mounting. NetMeters are typically mounted next to the electrical panel where they are wired-in, to measure voltage and current, using Current Transformers (CTs).

The **Aysix** NetMeter is rated for use in 600V 3-phase systems and may also be used with lower voltages, and in split and single phase applications.

A self-contained Web server inside the **Aysix** NetMeter serves up a full featured user interface that may be accessed using a standard web browser.

Since the **Aysix** NetMeter units communicate using a standard web browser, there is no need to install and maintain an application program on the users computer.

The built-in web server is compatible with all major web browsers including Firefox, Internet Explorer 9, Chrome, Safari, Opera, or any standards compliant web browser.
Real-Time Data
Through a web browser, real-time data from the Aysix NetMeter can be viewed either graphically or numerically.

Historical Data
The Aysix NetMeter can store more than 2 years of detailed energy history (1 minute resolution) and well over 10 years of hourly energy history.

A calendar style overview shows daily energy use. Clicking on one of the days takes the user immediately to an interactive chart where the energy use for the selected day may be viewed (with zoom/pan controls) and compared to other days.

Power Quality Analysis
In addition to power and energy measurement, the Aysix NetMeter is also a full-featured tool for power quality analysis. All key electrical parameters can be displayed in real-time including:
- Active power
- Reactive power
- Apparent power
- Accumulated energy (active/reactive/apparent)
- Fundamental accumulated energy (active/reactive)
- RMS current
- RMS voltage
- Power factor
- Phase angle
- Line frequency
- Totals and per-phase measurements

With the proliferation of IT infrastructure and new lighting technologies, power utilities are becoming more concerned about the load quality of their commercial/industrial clients. The result is that poor load quality can adversely affect the price customers pay. The ability of the Aysix NetMeter to monitor power quality in real-time allows your operations to take action thus avoiding unnecessary costs.
Built-in Data Logger

Up to 47 different measurements can be enabled for storage by the internal data logger. This is in addition to the historical power data.

Logged data can be downloaded in Comma Separated Values format (CSV) for use in spreadsheet or other programs. It can also be accessed as JSON format (JavaScript Object Notation) for use in web applications.

The Z3 Open Application Framework

Z3 provides a documented Application Programming Interface (API) based on a cost-free license. It allows users and 3rd party developers to easily integrate the Z3 data into their custom application:

- Generate reports that consolidate enterprise wide energy assets
- Combine energy data into integrated displays of information important to business operations (dashboards)

With the Z3 API, real-time and historical energy data is available using standard Web 2.0 programming techniques such as HTML, JavaScript, and AJAX.