



## **Emerging Technologies**

### **Greening the Manufacturing Sector**

Tim Davidick, CEM, CSDP  
Director, Curtailment and  
Demand Response Programs  
October 22, 2009



“What's measured improves”

Peter F. Drucker, Author, Management Consultant

“You can't manage what you don't measure”

Jack Welch, Former CEO, General Electric Corp.

“We live in a sea of facts, but we drown in the lack of knowledge”

Randy Haines CEM, Energy Manager, The Jefferson Health System

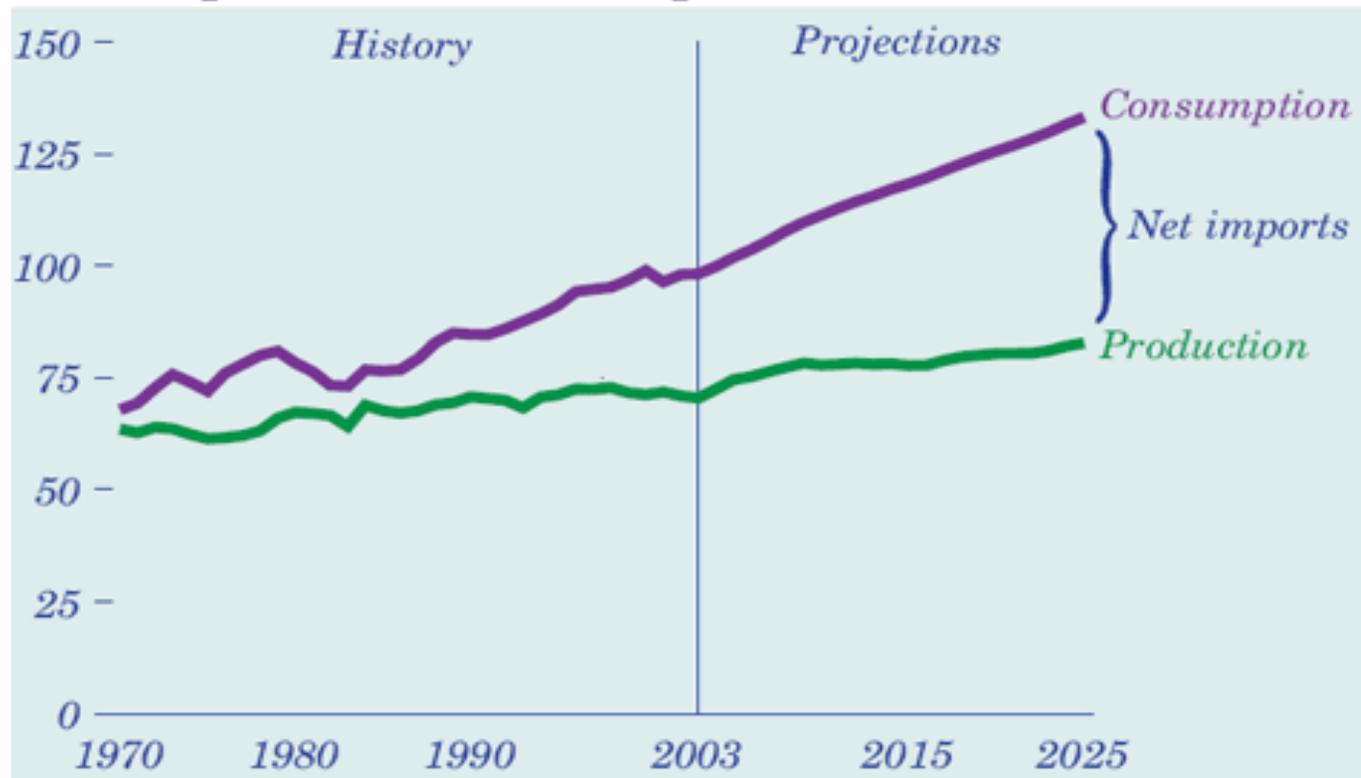
What's so hard  
about being **green**?

Energy efficiency is the best way to  
reduce your “carbon footprint”.  
*U.S. Environmental Protection Agency*



## In the U.S. There is an Accelerating Gap Between Energy Supply and Energy Demand

*Figure 6. Total energy production and consumption, 1970-2025 (quadrillion Btu)*



Source: Alliance to Save Energy



## What are Some Reasons Why?

- Population growth worldwide
- Personal incomes growing
- More energy consuming goods
  - HDTV (Plasma), iPod, smart phones, computers
  - Office equipment, air conditioning
- Use is rapidly growing
  - Greater HP and ranges in vehicles
  - Bigger homes (*McMansions*) all with A/C, computers, microwaves and TVs

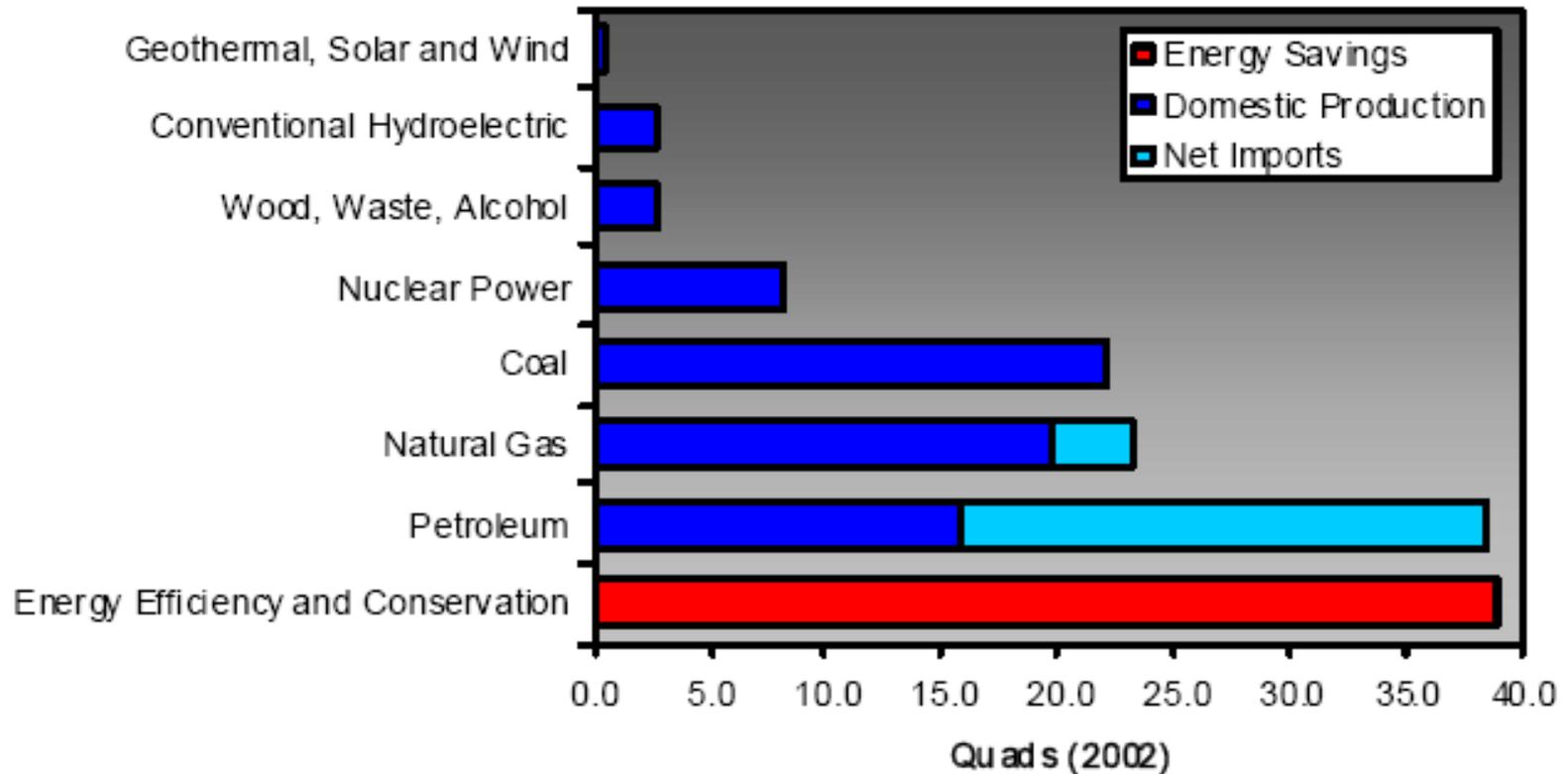
What's so hard  
about being **green**?

Office equipment accounts for  
almost 16% of an office  
building's energy use.





# How Do We Satisfy Our Thirst and Reduce Dependency on Foreign Sources?



Source: Alliance to Save Energy



## Who is ADMMicro, Inc.?

- A privately held company founded in 2002 with headquarters located in [Roanoke, Virginia](#)
- Highly experienced professionals
  - 50+ Employees
  - 290 combined years of utility experience
  - Degreed Registered Professional Engineers
  - Certified Energy Managers
  - Sustainable Design Professionals
- We manufacture advanced submetering and energy management systems.
- Our system's algorithms can dynamically control energy consuming equipment and reduce demand peaks to pre-determined levels, thus reducing overall energy costs.



What's so hard  
about being **green**?

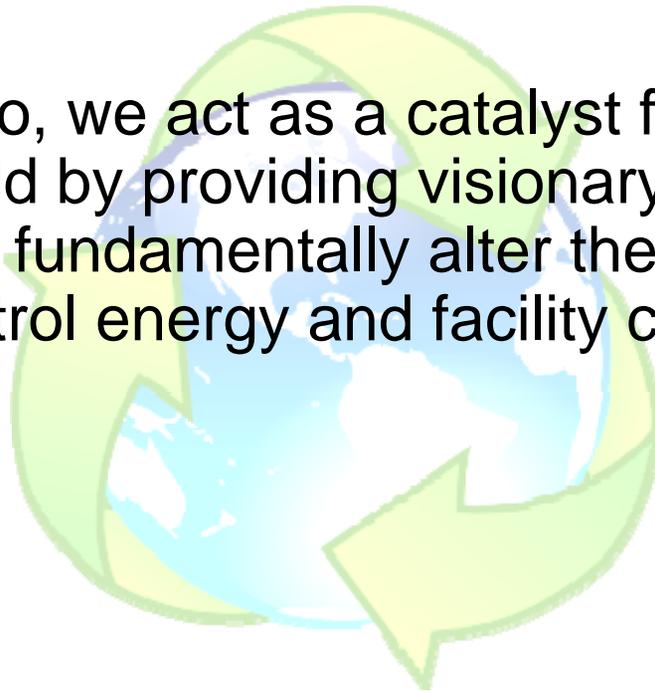
**Subject Matter Experts**





## Vision Statement

“At ADM Micro, we act as a catalyst for a smarter and **greener** world by providing visionary tools that enable our clients to fundamentally alter their knowledge and ability to control energy and facility costs.”

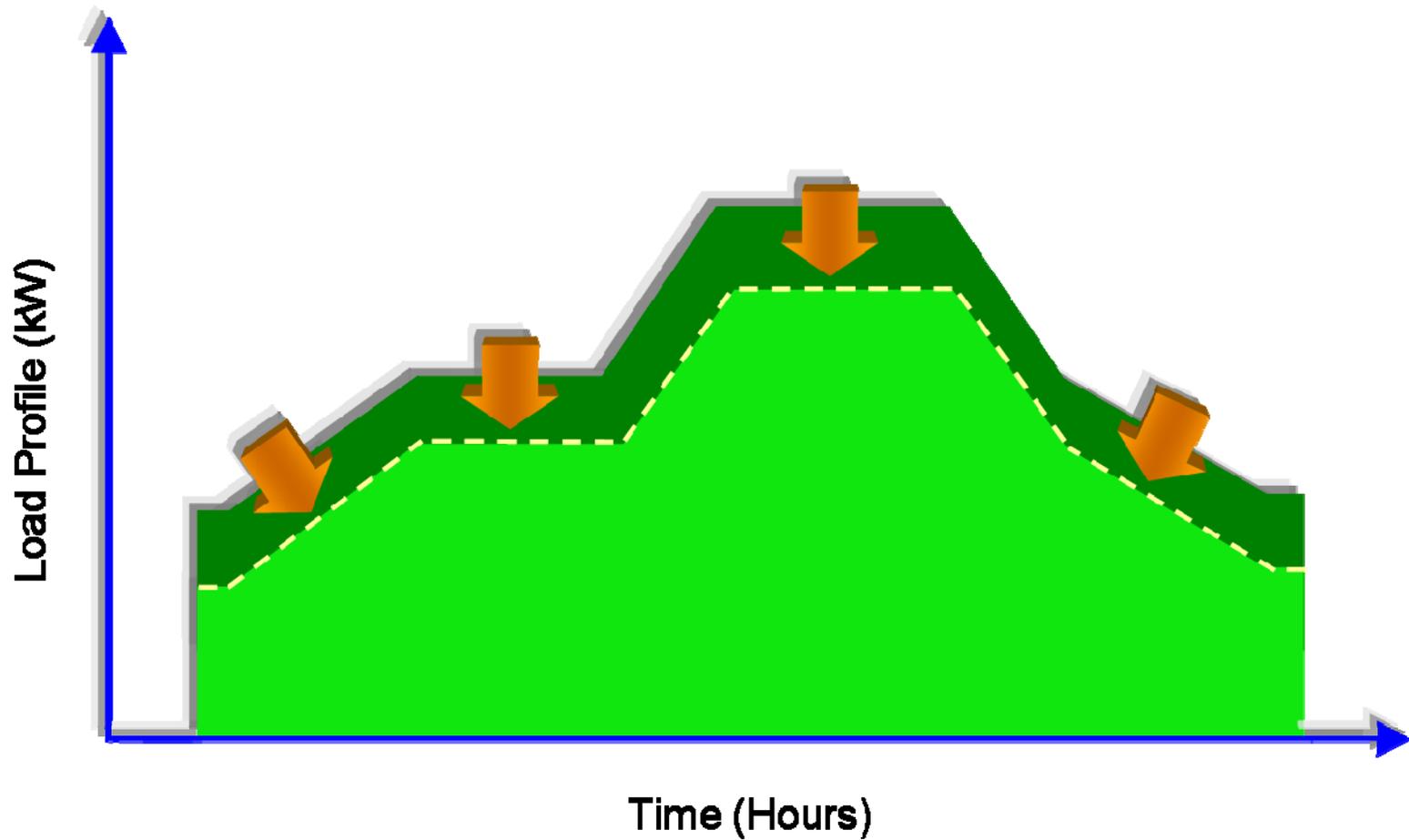


What's so hard  
about being **green**?

Providing Sustainable  
Energy Solutions



## Standard Energy Management





## Technology Platform – ADM3612





## Measure, Control and Monitor

- HVAC
  - Duct/Space temps, run time, energy, filters
- Lighting
  - Energy, outage, ambient levels
- Freezers/Coolers
  - Temps, energy, proper cycling
- Total Building Load (Shadow Meter)
- OAT, humidity, CO2, building pressure, etc...



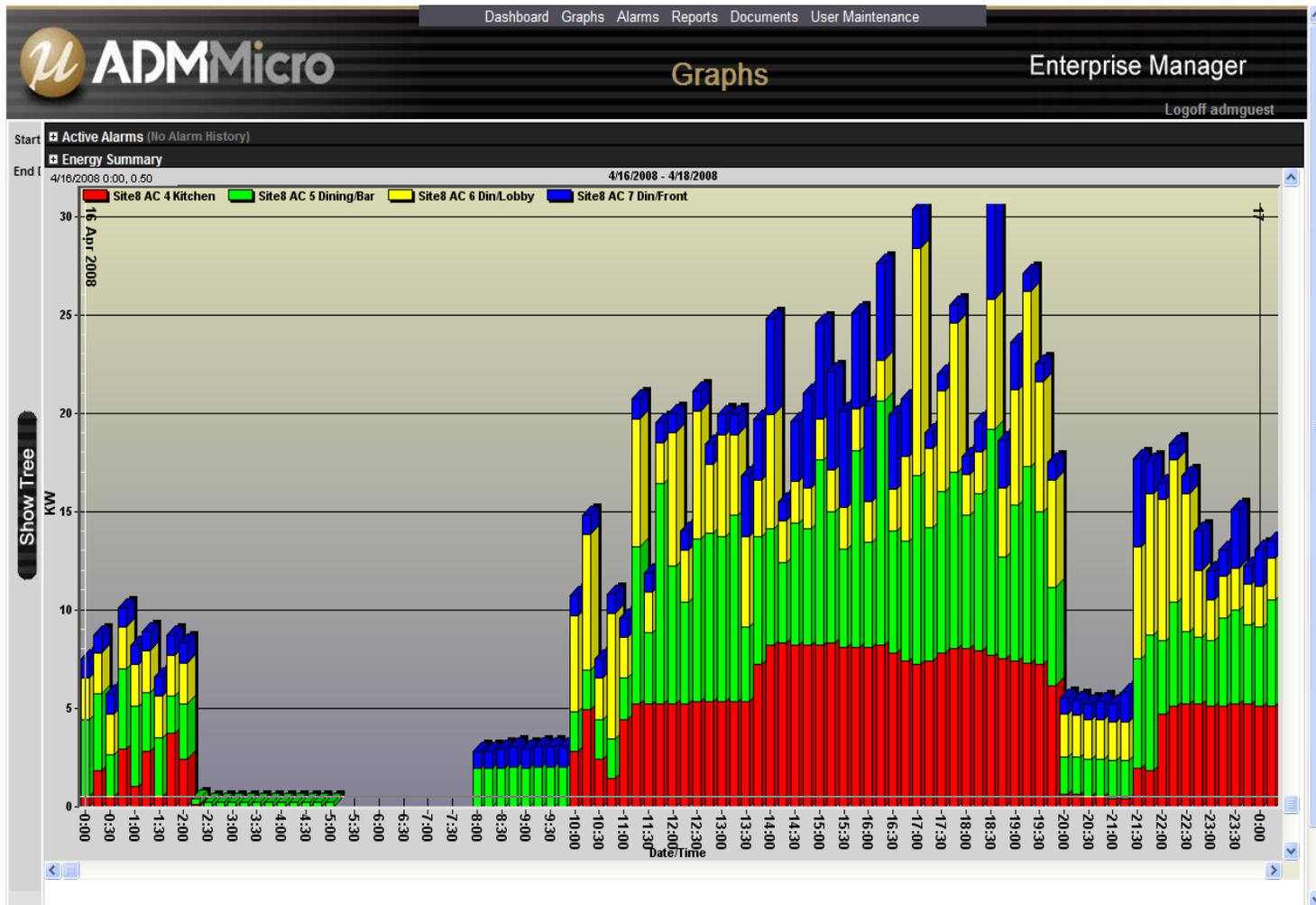
What's so hard about being **green**?

**Flexibility**

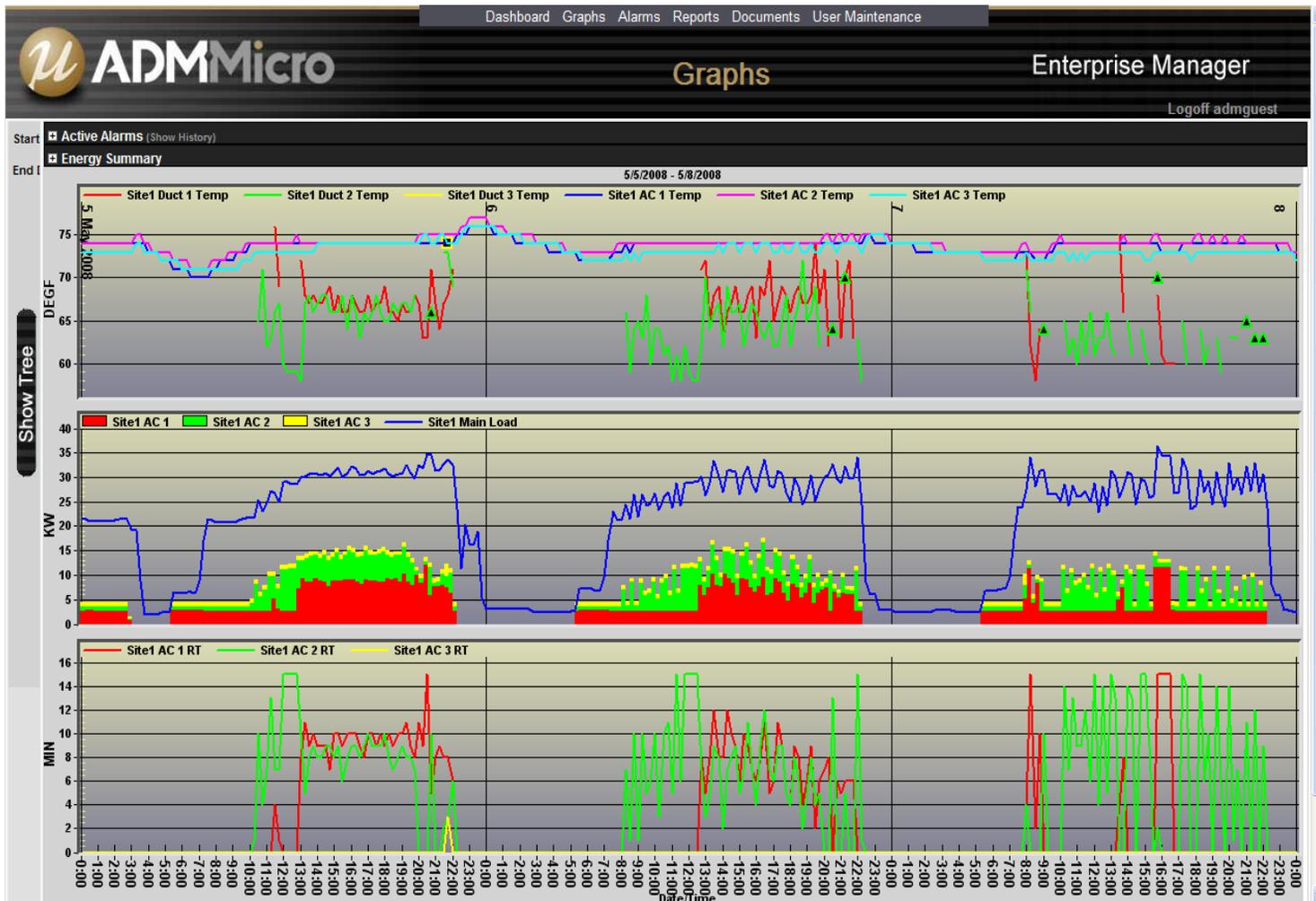




# What's Measured Improves



# You Can't Manage What You Don't Measure





## Typical Equipment Installation



1. Flexible Current Transformers used to measure current flow from main electricity bus.
2. Rigid Current Transformers used to submeter the building elevator system
3. ADMMicro 1204 system (internal view)
4. ADMMicro 1204 system installed.

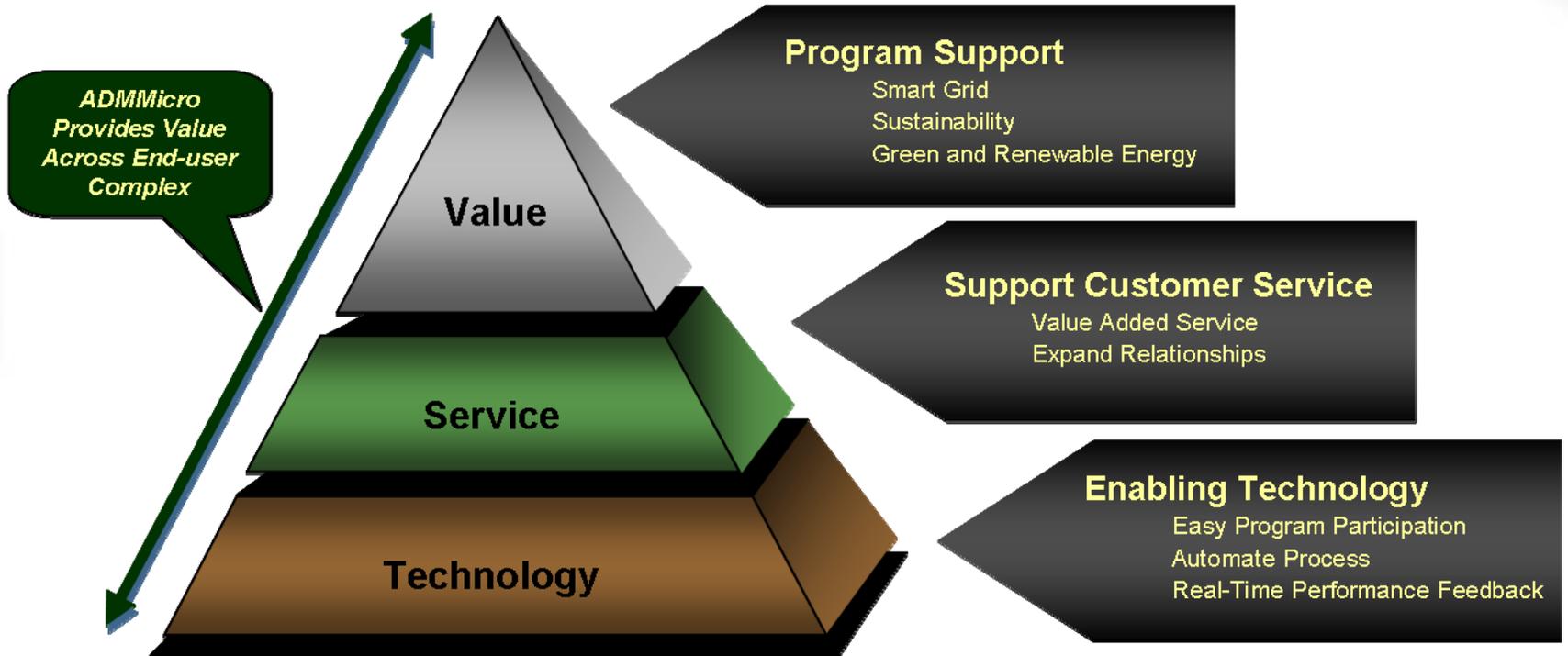
What's so hard about being **green**?

Electricity consumption in the U.S. is expected to increase by 51% from 2002-2025.  
*U.S. Energy Information Administration*





# Converting Opportunities for Customers



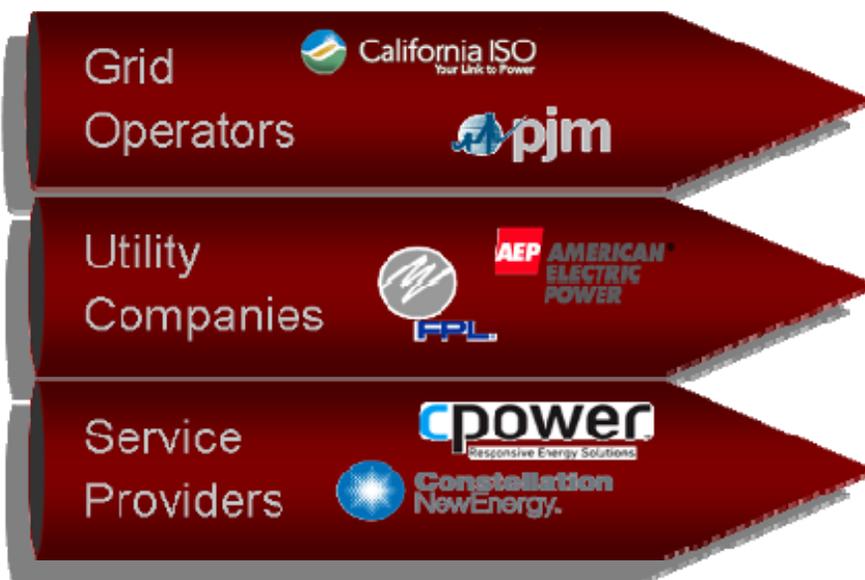
What's so hard about being **green**?

**Offering Value Added Services**





## Market Opportunities & Strategic Alliances



What's so hard about being **green**?

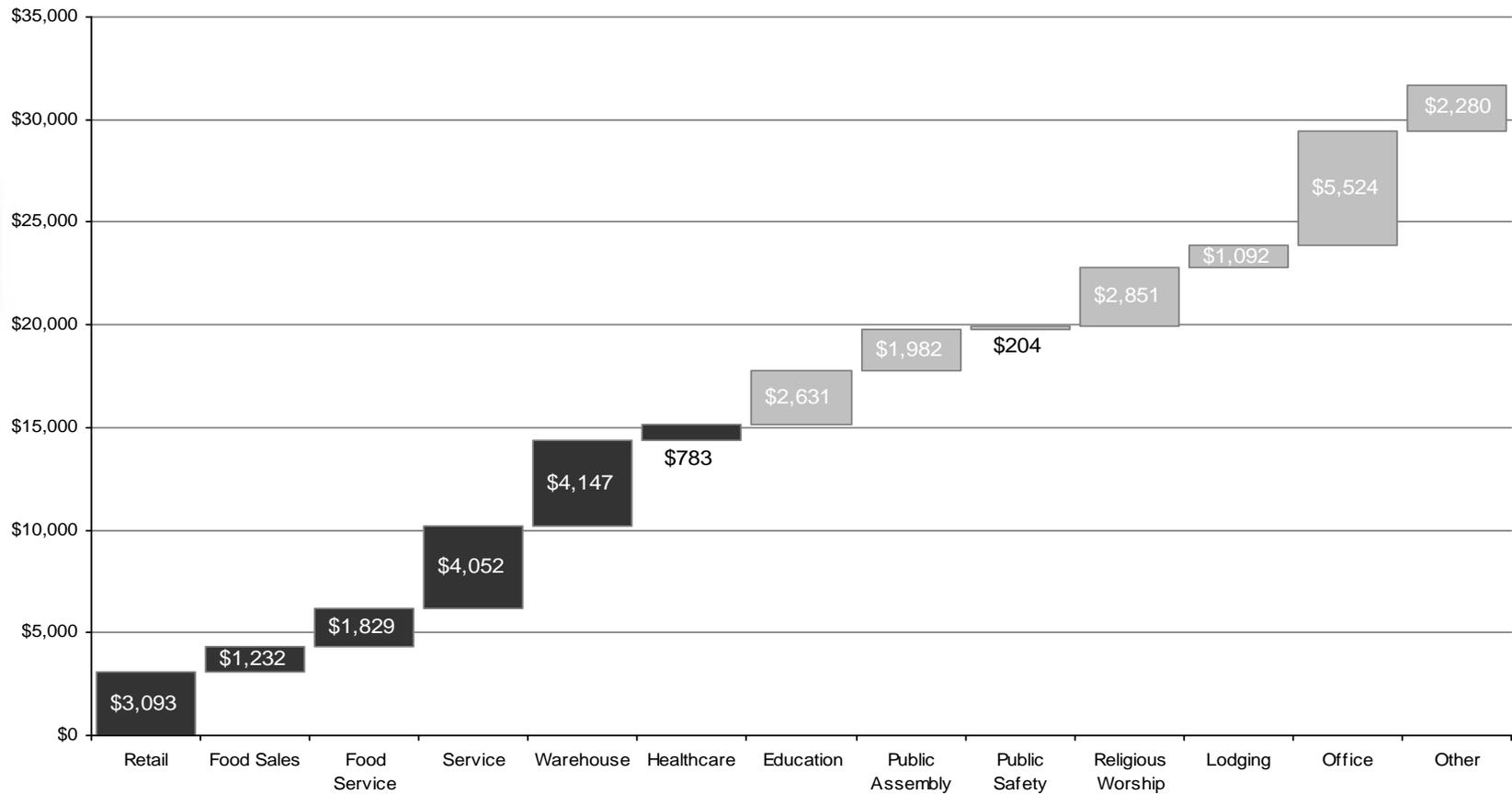
Forward Looking





# U.S. EMS Market for Buildings 1,001 to 50,000 SF

Dollars in Thousands

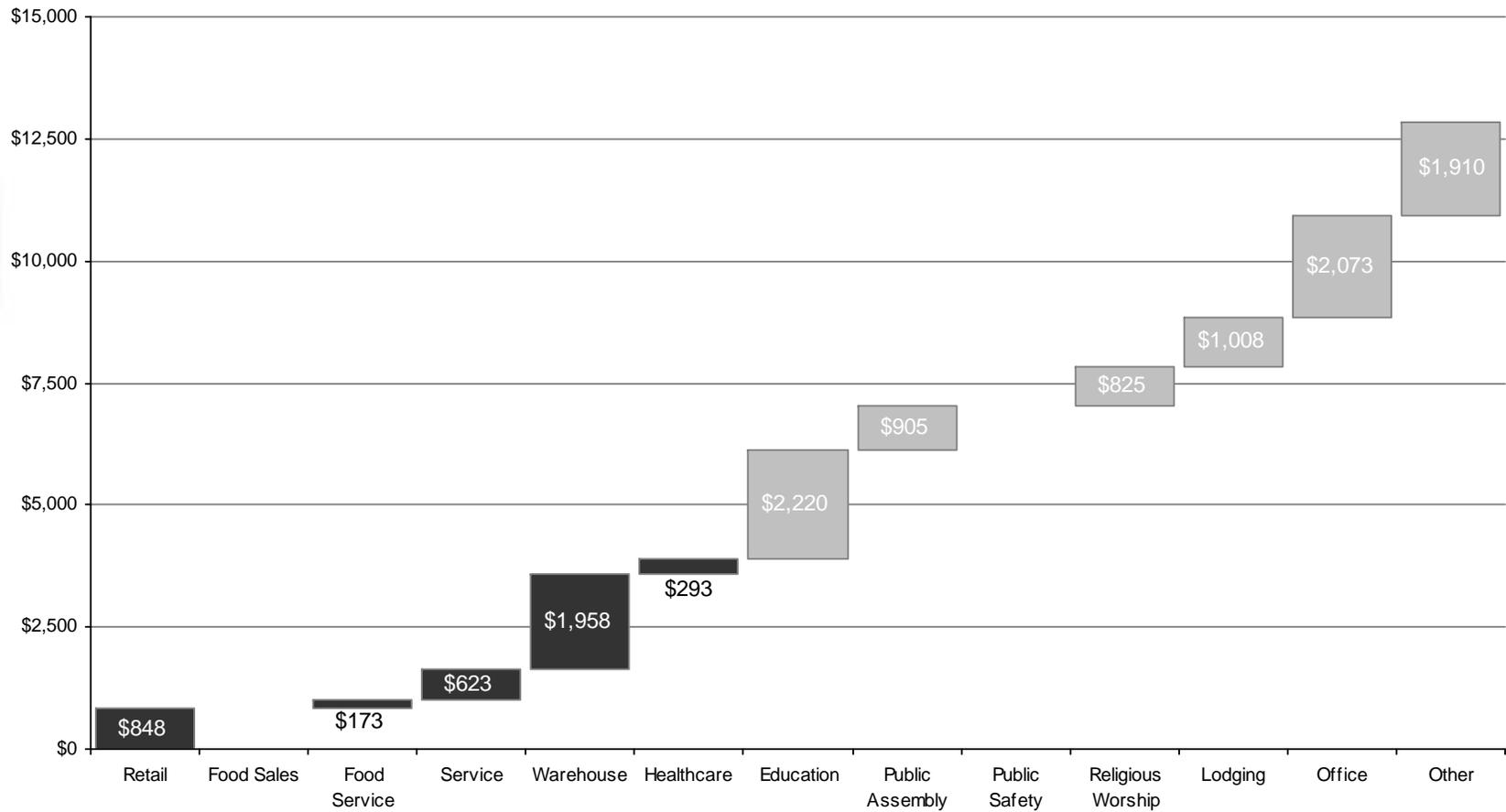


Based on U.S. Energy Information Administration (EIA) – 2003 Commercial Buildings Energy Consumption Survey (CBECS) data.



# U.S. Submetering Market for Buildings 10,001 to 500,000+ SF

Dollars in Thousands



Based on U.S. Energy Information Administration (EIA) – 2003 Commercial Buildings Energy Consumption Survey (CBECS) data.



## Conclusion

- Energy consumption in the US is far outpacing the current ability to produce it - increasing our security risk by relying on foreign countries to fill the gap.
- Energy Efficiency is America's greatest energy resource and it can begin solving the problem TODAY!
- Advanced submetering and control systems provide data that can be used to monitor and control building systems to run them optimally
- Data analysis is the crucial link between energy data and developing solutions for improved system performance and reduced energy cost
- ADMMicro develops and manufactures patented Smart Grid technology and provides analytical services that helps its customers gain control over their energy consumption and cost

What's so hard  
about being **green**?

Over the last 30 years, energy  
efficiency has reduced  
energy use in the U.S. by 47%  
*Alliance to Save Energy*





What's so hard about  
being **green**?



**Tim Davidick CEM, CSDP**  
Managing Director, Curtailment & Demand  
Response Programs

Tel: (540) 527-4600 | Ext. 202  
Cell: (703) 674-7890  
Fax: (540) 527-4605  
Tim.Davidick@admmicro.com  
www.admmicro.com

2797 Frontage Road, NW | Suite 1000 | Roanoke, Virginia 24017