

# Industrial Energy Management: Sizing up Energy Management as a Program Opportunity

## Cimetrics' Experiences

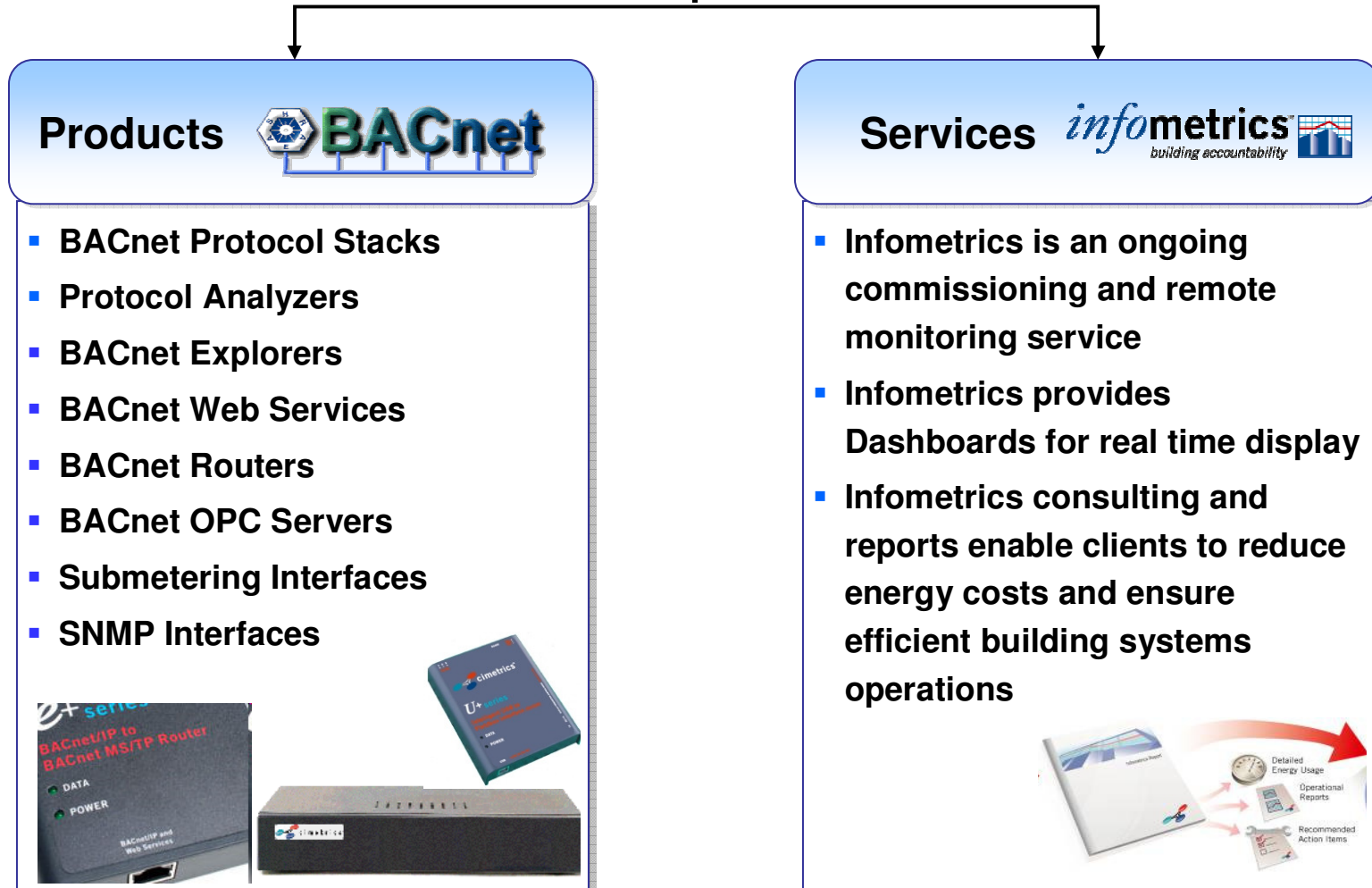
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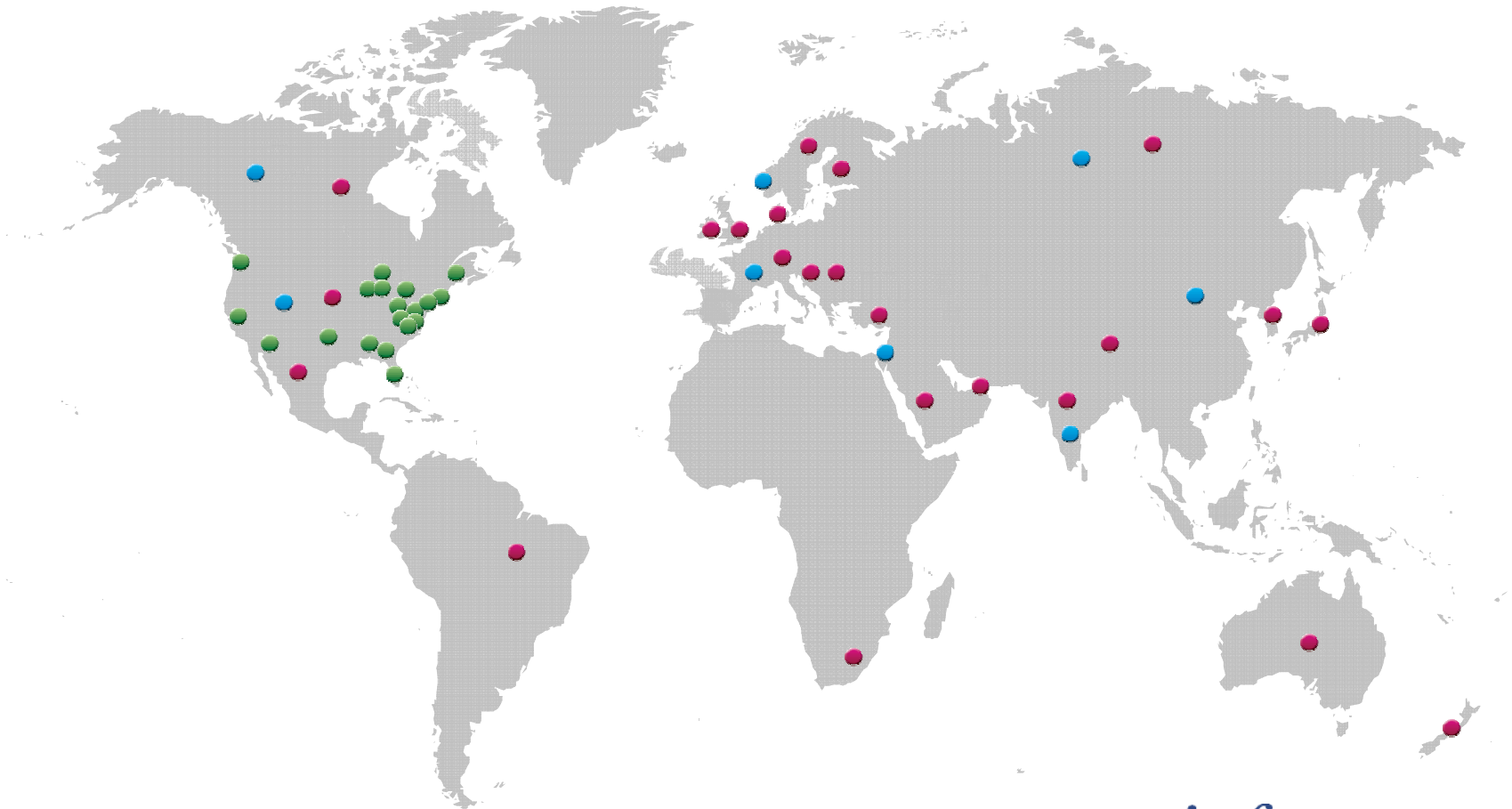


***Cimetrics*** is a 21 year old company whose core competency is networked control systems and energy efficiency



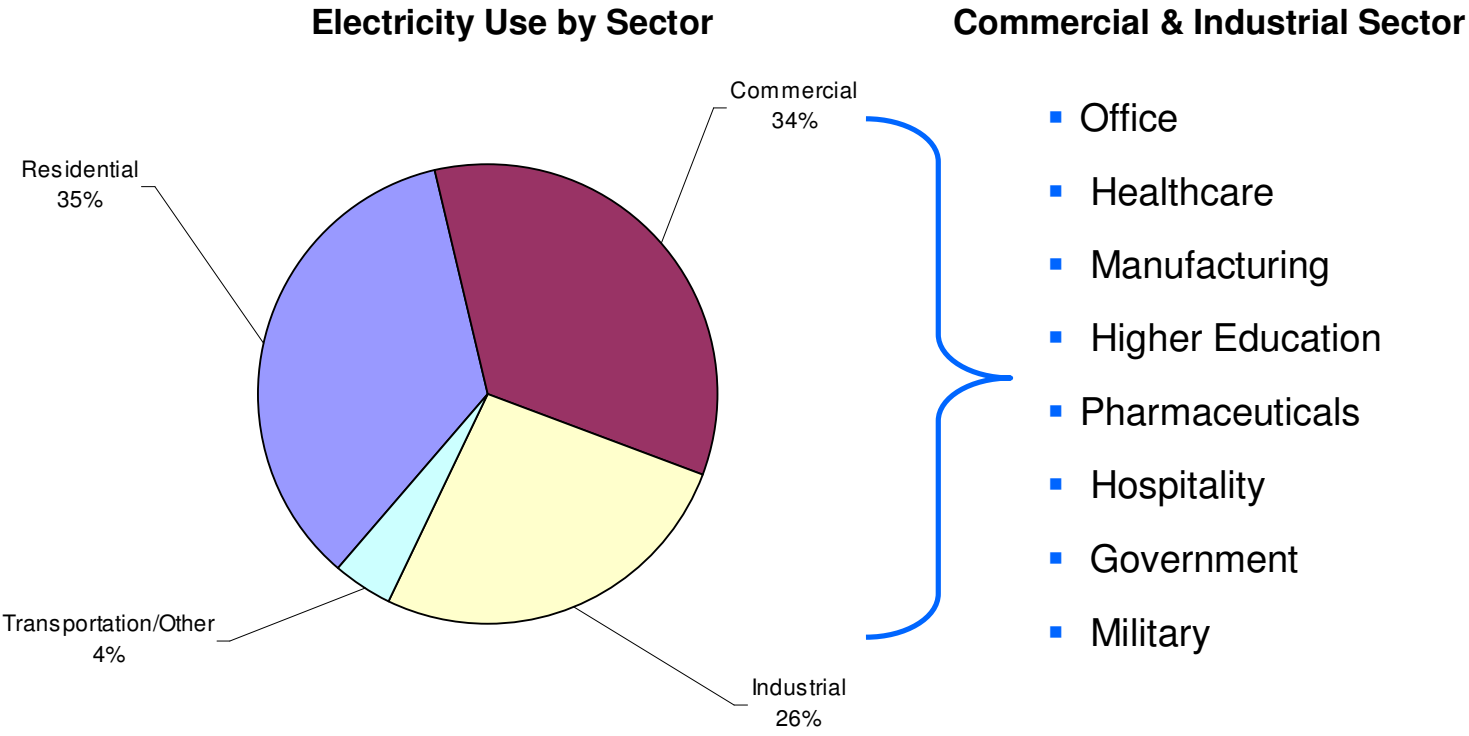
# We are global...both in terms of expertise and reach

- Cimetrics products: Sold in over 25 countries
- Infometrics service: Used in 19 States in the US
- Cimetrics team: Comprised of PhD's, PE's and CEM's from 8 countries

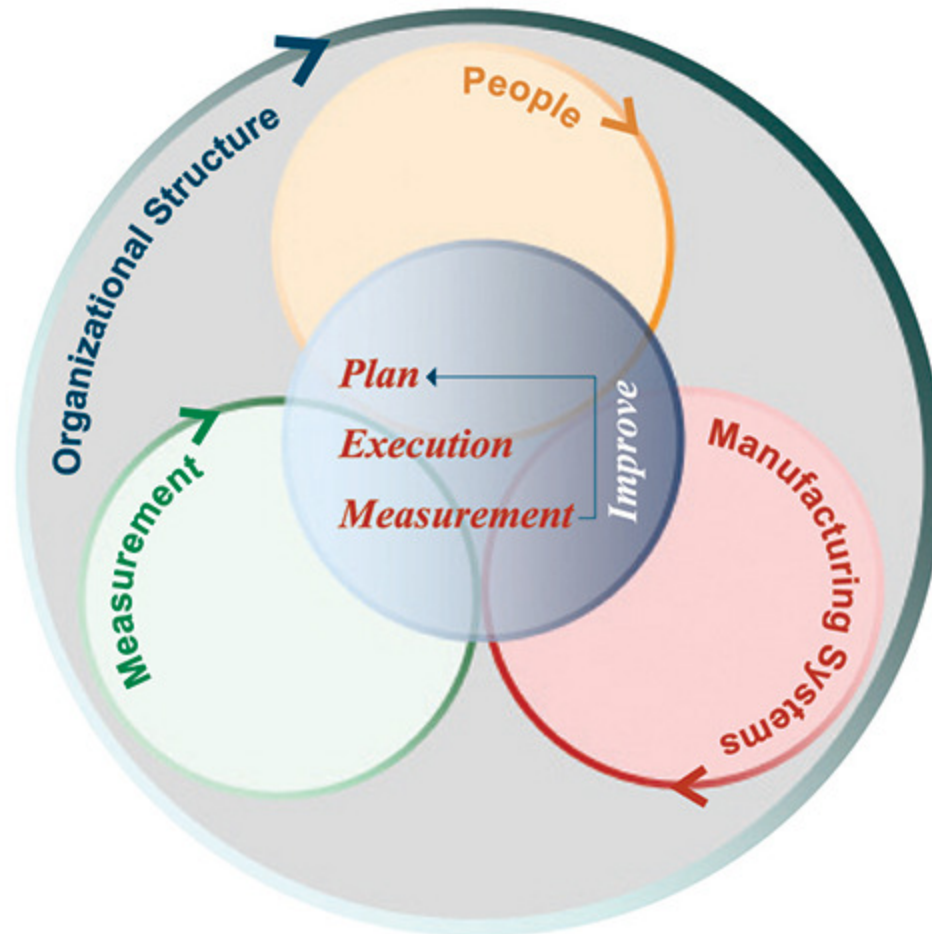


Source: Cimetrics product sales and project experience.

# Electricity Consumption



# Strategic Energy Management



...the greatest potential comes when companies correlate continuous improvement with a strategic approach to energy management to create a deliberate process focused on increasing profitability, and achieving greater productivity and reliability.

## Strategic Energy Management: Old Method

### Methods

- **Engineering studies/Audits**
- **Programs geared towards equipment replacement**
- **Older technology applied to analysis**

### Results

- **Lack of coordination**
- **Longer time to implement**
- **Less effort spent on improving entire system/process**
- **Possible lack of long term M&V**
- **Less feedback**

# Strategic Energy Management: New Method

## Methods

- Stakeholder involvement
- Holistic Approach
- Incorporate new technologies
- Savings Persistence

## Results

- Collaboration of utility, consultants, site
- Top down and bottom up systems and product analysis-deeper analysis
- New technology in analysis, implementation, and M&V-Benchmarking
- Constant feedback on operations ensures continuous optimal operation-commissioning

## Who qualifies as a potential Energy Management prospect?

### We can help clients that have:

- Automation system (Building, Process, etc). ✓
- Facility size: greater than 100,000 sq ft. ✓
- Energy spend: greater than \$300,000/yr. ✓
- Energy use: greater than 80,000 Btu/sq ft/yr. ✓
- Large HVAC or connected process load. ✓



Service can not be implemented if the client does not have a Automation with DDC.

## Questions and challenges faced by our clients...

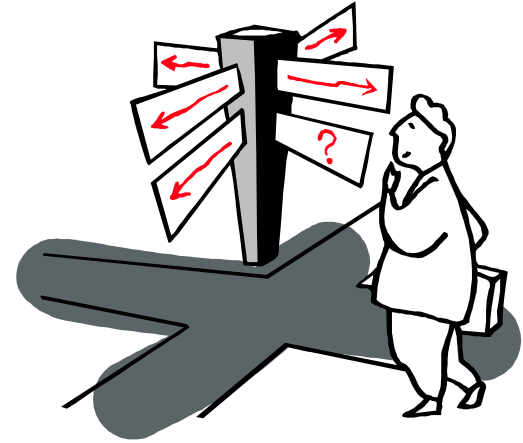
**How do we best allocate our limited resources**

**... without jeopardizing operations,**

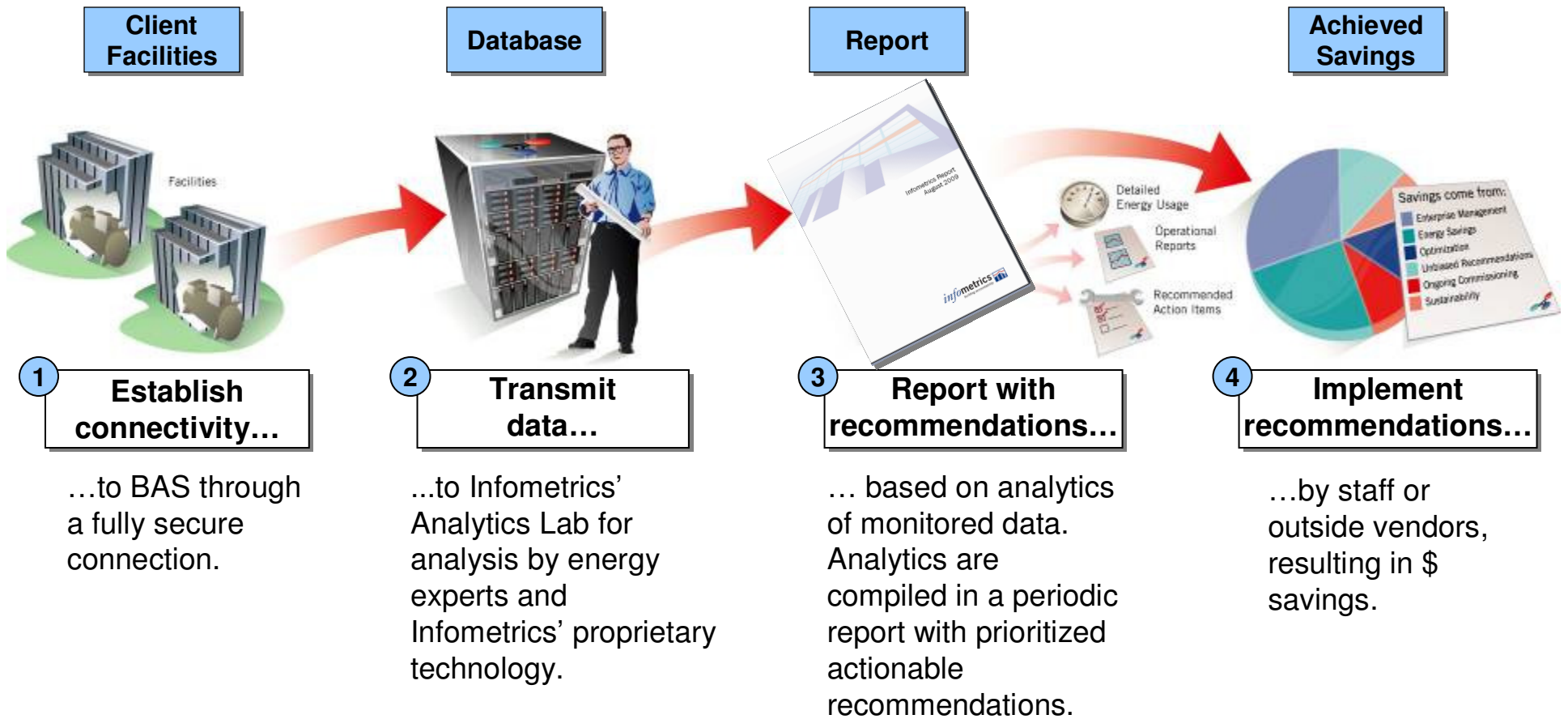
**... without compromising safety,**

**... where the real benefit is greater than the perceived one,**

**... without sacrificing real opportunities in energy reduction?**



# An overview of Cimetrics' Continuous Energy Improvement offering



Source: Infometrics project experience.

## Results: What does this lead to?

1. **Reduced operation & maintenance costs.** ✓
2. **Mitigation of risk.** ✓
3. **Improved air quality, occupant comfort, and productivity.** ✓
4. **Efficient and proper equipment operation.** ✓
5. **Improved coordination between design, construction & occupancy for capital projects.** ✓

**An answer to the questions  
and challenges faced by our  
clients!**

## Pharma Example

### What did we analyze?

#### Client X, Facilities A & B

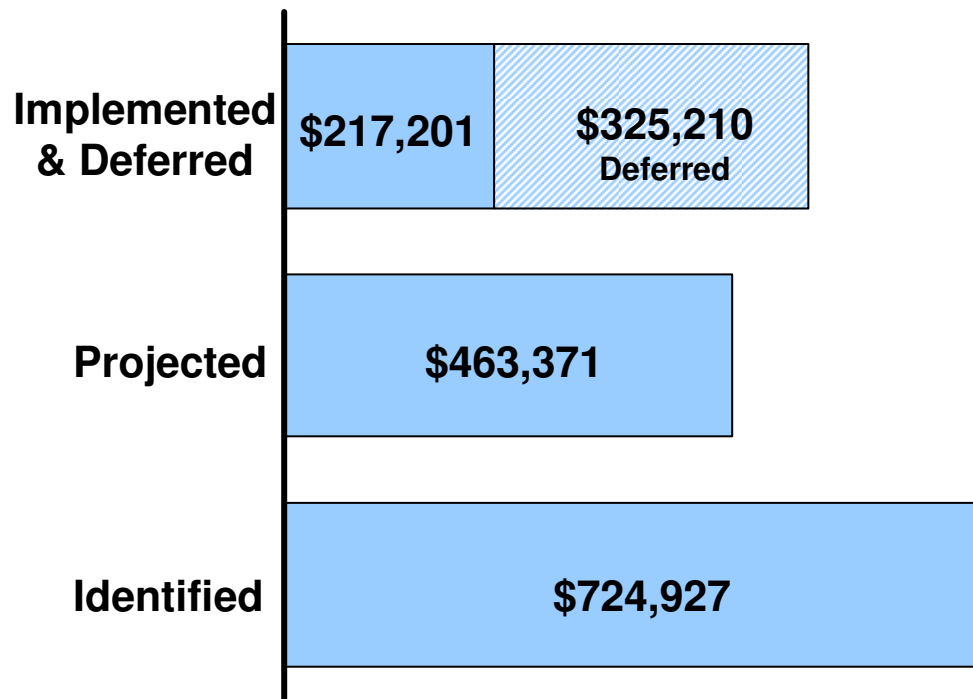
- 2,000,000+ Sq. ft.
- 17,853 BAS points
- 590+ major pieces of equipment (multiple types)

### What did we find?

- 214 improvement opportunities
- \$724,927 in potential savings per year
- 3,993 MTons of potential CO<sub>2</sub> savings per year

## Energy cost savings (aggregate: Facilities A & B)

### Energy savings (\$ per year)



### What does it mean?

- **6.5% HVAC (2.7% total) realized energy cost savings.**
- **Identified potential of 22% HVAC (9% total) reduction in your energy budget expense.**

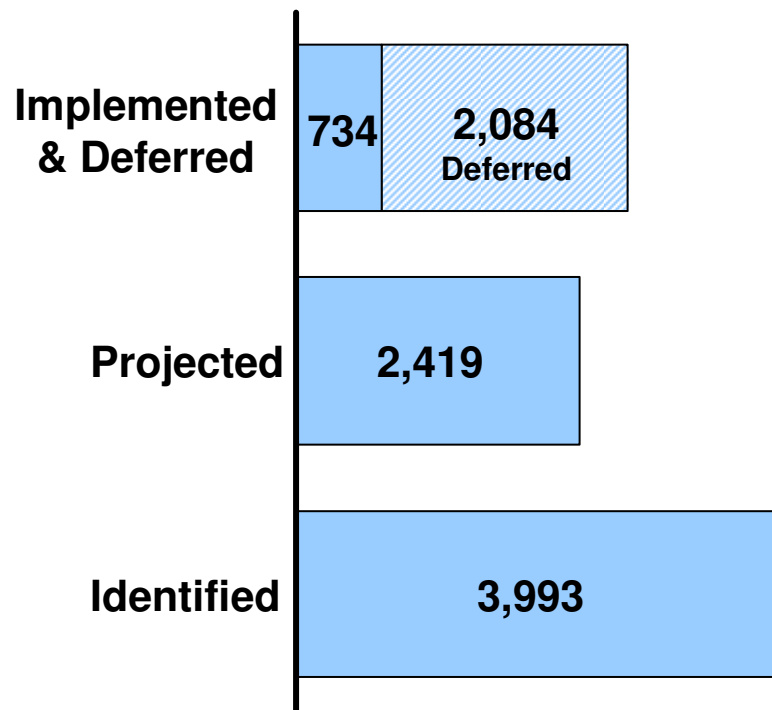
## Energy cost saving summary by facility

|             | Energy cost savings (\$ per year) |            |           |
|-------------|-----------------------------------|------------|-----------|
|             | Facility A                        | Facility B | Total     |
| Implemented | \$113,731                         | \$103,470  | \$217,201 |
| Deferred    | \$246,795                         | \$78,415   | \$325,210 |
| Projected   | \$280,000                         | \$183,371  | \$463,371 |
| Identified  | \$425,785                         | \$299,187  | \$724,927 |

Source: Cimetrics project example. Client name concealed for confidentiality purposes.

## CO<sub>2</sub> savings (aggregate: Facilities A & B)

CO<sub>2</sub> savings (Metric tons per year)



What does it mean?

- Positioned for two of the three LEED Energy and Atmosphere prerequisites.
- Qualifying for at least 10 LEED Energy and Atmosphere points.
- Smaller carbon footprint for your products.

...and all this is achieved with the \$217,201 in realized cost savings!

# Questions and challenges for Continuous Energy Improvement...

- **Connectivity (IT)**

1. Will it impact my operations (Validated Sites)?
2. Do I have the right kind of Automation system?

- **Education Gap**

1. What is commissioning (retro, re-, ongoing, continuous)?

- **Cost**

- **How long do I need Continuous Energy Improvement (Persistence)?**



**National Grid**  
**NStar**  
**Austin Utilities**  
**Commonwealth Edison**  
**PG&E**

## Incorporating Strategic Energy Management into Program Design

- **Build programs to incentivize proven technology** ✓
- **Target Clients with advanced Automation systems** ✓
- **Reward tangible results** ✓
- **Motivate persistence on programs with multi year requirements** ✓

# Essential Elements of a Strategic Energy Management Program

