



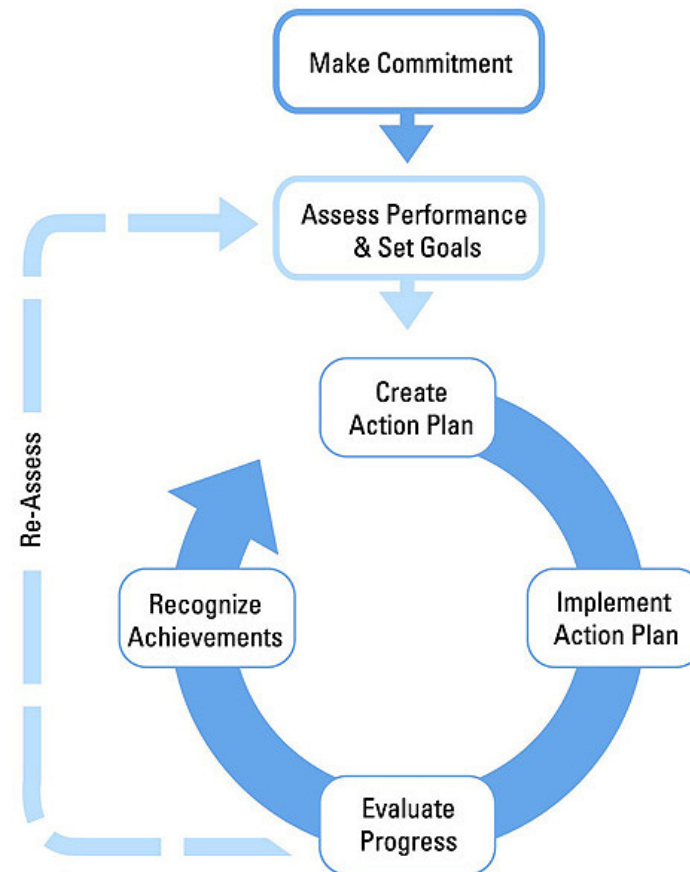
Using Service and Product Providers to Leverage Your Energy Efforts

October 20, 2004

About The Web Conferences



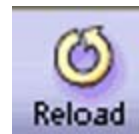
- **Monthly**
- **Topics are structured on a strategic approach to energy management**
- **Help you continually improve energy performance**
- **Opportunity to share ideas with others**
- **Slides are a starting point for discussion**
- **Open & Interactive**



Web Conference Tips



- Mute phone when listening!
Improves sound quality for everyone.
- If slides are not advancing, hit reload button or close presentation window and press the launch button again.



Web Conference Tips



- Chat Feature



- Presentation Slides will be sent by email to all participants following the web conference.
- Hold & Music – If your phone system has music-on-hold, please don't put the web conference on hold!





Today's Web Conference

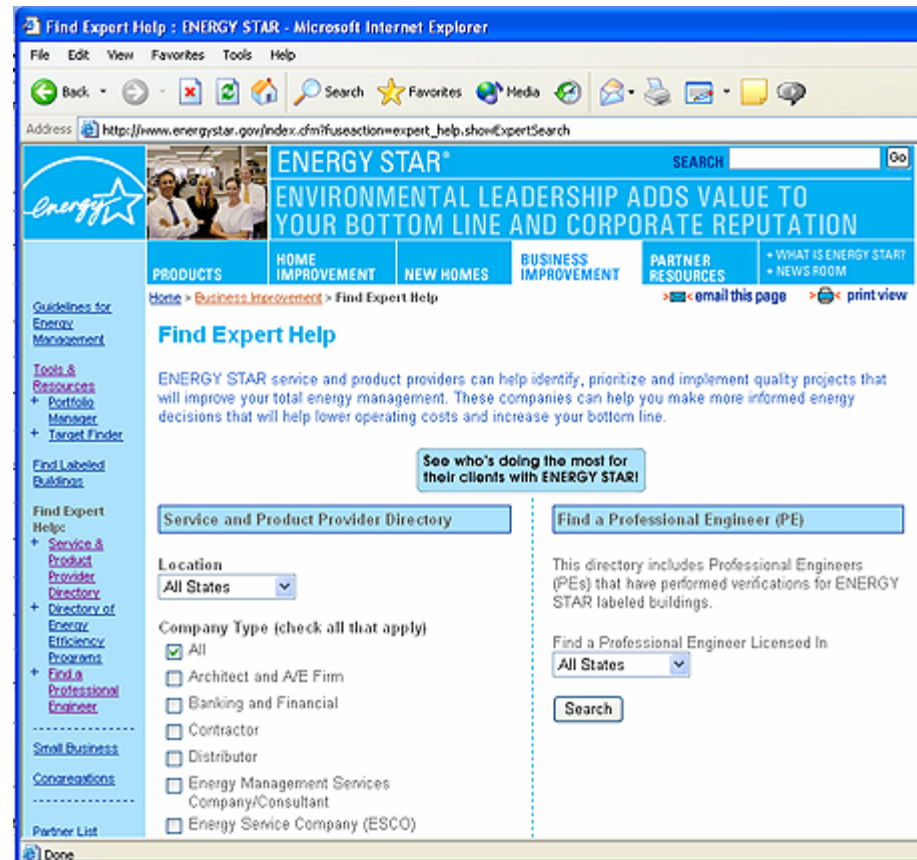


- Introduction
- James Dore – Wheatstone Energy
- Tom Pagliuco - Prenova
- Questions & Discussion
- Announcements

Find Expert Help



On-line directory of service and product providers that support the goals of ENERGY STAR partners



www.energystar.gov



Using Service and Product Providers to Leverage Your Energy Efforts

Prenova/Owens Corning Energy Process Optimization

Thomas Pagliuco – Prenova

Fred Dannhauser – Owens Corning

October 20, 2004

Who is Owens Corning?

- **World leader in building materials systems and composites systems**
- **\$5 billion in sales in 2003**
- **70+ Manufacturing Facilities**
- **Proactive approach to managing energy costs**

Who is Prenova?

- **Expertise in Energy Process Management Solutions**
- **Independent broker for energy supply/demand ideas**
- **\$1.6 billion in energy spend - 35,000 locations**
- **Collaborative approach to energy management**
- **Customers**
 - ✓ **pay less for energy**
 - ✓ **use less energy**
 - ✓ **risk less as they manage future energy strategies**

Owens Corning - Prenova

Relationship Overview

Since 2002, Prenova provides an energy management solution to Owens Corning's North American facilities for:

- Energy Supply Management
- Energy Price Risk Management
- Energy Process Optimization
- Bill Payment and Data Management
- Utility Due Diligence
- Remote Monitoring, Scheduling, Alarming and Trending

Owens Corning – Prenova

Energy Process Optimization Overview

- **11 Insulation and Composite Glass plants**
- **Total energy spend of over \$50 million per year**
- **Optimization phase: 4 - 7 months per plant**
- **No process area off limits for energy savings investigation**

What is Energy Process Optimization?

- A methodology that realizes energy savings by leveraging existing assets and implementing processes and procedures that create sustainable results
- Benefits are:
 - ✓ Improves Return on Net Assets (RONA)
 - ✓ Establishes and propagates best practices
 - ✓ Offers low barrier to implementation
 - ✓ Requires little capital
 - ✓ Provides process for continuous improvement
 - ✓ Reduces maintenance and raw material costs

Energy Process Optimization Principles

- **Process focused approach**
 - ✓ Pareto analysis of energy usage
 - ✓ Statistical process control methodology
 - ✓ Cross functional team involvement
- **Data driven decision making**
- **No cost or low cost to implement**
 - ✓ Operations and maintenance opportunities
 - ✓ Capital opportunities identified - not essential to success
- **Provide resources focused on energy reduction**
- **Ensure sustainable savings/continuous optimization**

Energy Process Optimization Process

- **Phase One - Energy process optimization using a five step approach:**



Culture Change

- Education and increased energy awareness
- Processes and procedures developed and implemented

Assess the facility

- Pareto analysis of energy use by process area
- Material and energy balancing

Define the process

- Regression analysis
- Measurement and verification systems defined
- Define the infrastructure to support sustainability and continuous improvement

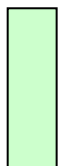
Understand and manage process variation

- SPC techniques

Improve the process

- Savings opportunities identified, quantified, and implemented
- Web based reporting of opportunities
- Project Management for the opportunity implementation effort

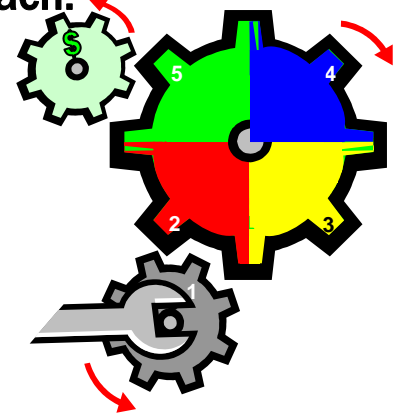
- **Phase Two - Sustainability and Continuous Improvement**



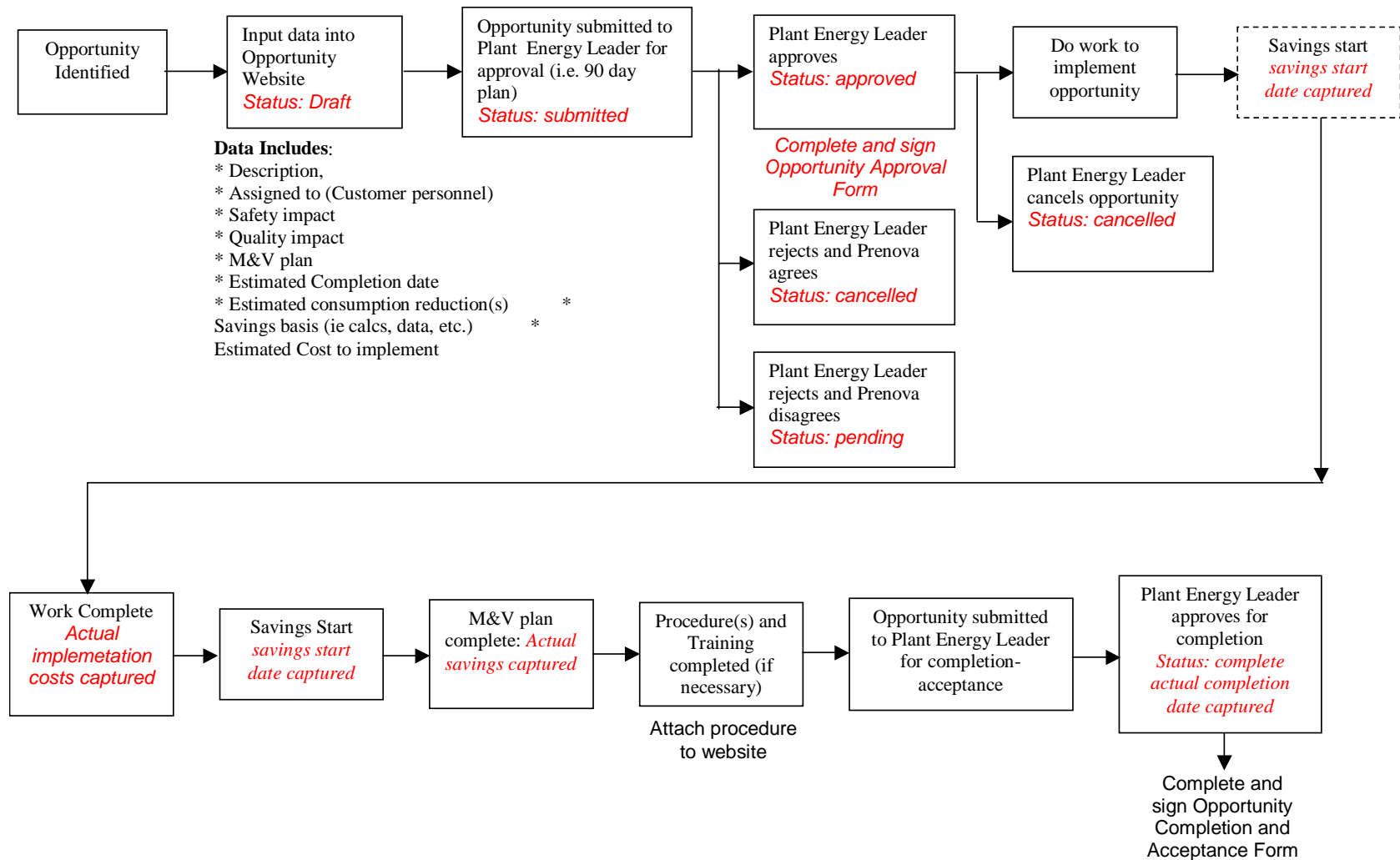
System in place to measure and monitor energy process performance

Alarming and reporting

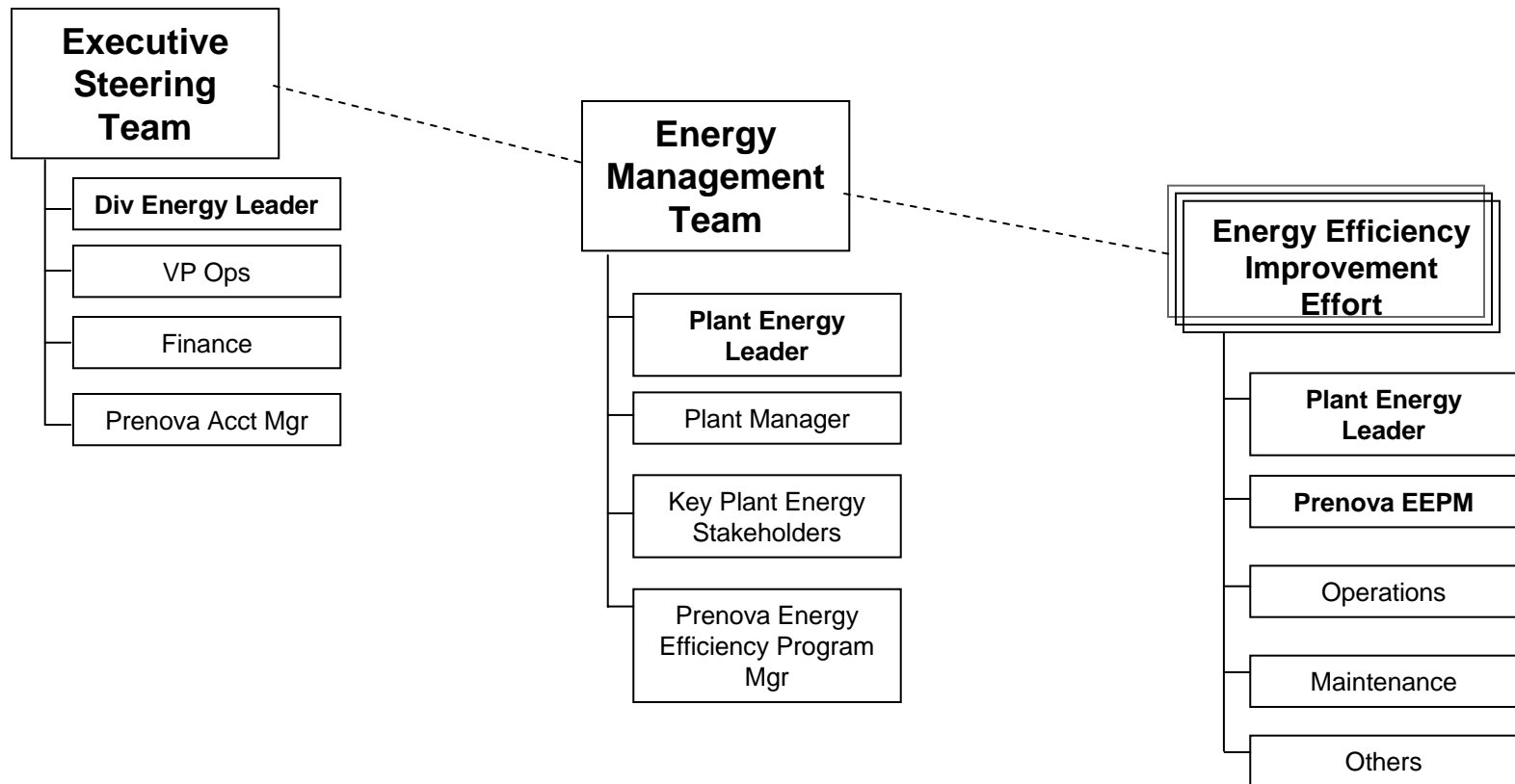
Data analysis enables additional opportunities to be identified and implemented



Opportunity Identification, Approval and Acceptance Process



Energy Process Optimization Organization



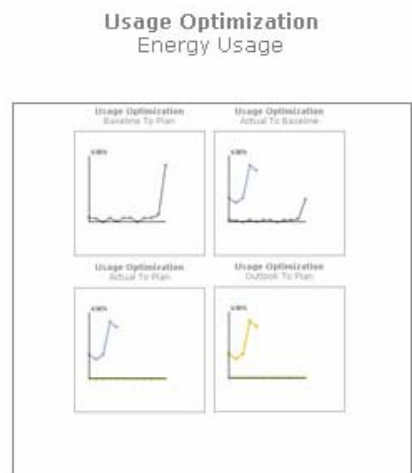
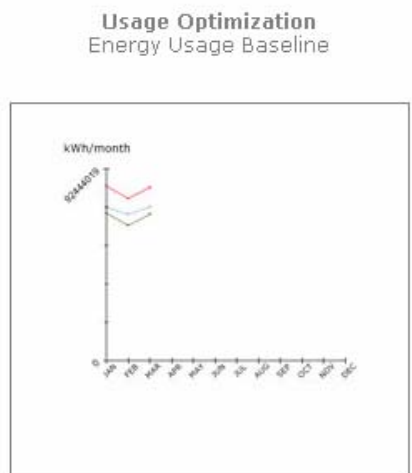
Sustainability

Performance Monitoring and Management System

- **Implemented at 6 plants**
- **Implementation in progress at remaining 5 plants**
- **Enhanced visibility to energy performance by plant and process area**
 - ✓ **Web reporting**
 - ✓ **Alarming**
- **Desired Results**
 - ✓ **Drive sustainability of energy savings**
 - ✓ **Platform for continuous improvement**
- **Demo: PMMS and PreVUE**



- Financial
- Financial**
- Usage Optimization
- Price Optimization
- Key Perf. Indicators
- Utility Management
- Asset Performance
- Service Performance
- Business Assurance
- Assumptions
- Business Operations
- Weather
- Energy Contracts
- Benchmarks
- Benchmarks



Calendar

Day
 Month
 Year
 Custom (mm/yyyy)
 Start Date:
 End Date:

October 2004						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
26	27	28	29	30	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31	1	2	3	4	5	6

Level

Corporate
 Division:
 Plant:
 Process Line:
 Process Area:

Type

Electricity
 Gas
 Compressed Air
 Total Energy

Units

Usage
 Usage/UOP

Results Achieved

- **Energy Savings**
 - ✓ 7% average reduction in annual energy spend
 - ✓ 71,000,000 kWh
 - ✓ 476,500 MMBtu
- **Costs**
 - ✓ Average cost per plant was \$120,000 after rebates
 - ✓ Rebate funding was \$775,000
- **Financial Return**
 - ✓ Less than 4 months average payback

Energy Process Optimization

Additional Benefits

- **Energy Efficiency Program Managers integrated into plant teams**
- **Synergy between supply and demand efforts**
- **Focus on energy use and reduction**
- **Awareness of energy usage/cost by process area**
- **Process and procedures to drive sustainable savings**
- **Best practices and common opportunities replicated**
- **“Engaged” other organizational teams in the effort**
- **Performance Measurement and Monitoring System**
- **Facilitates EPA Energy Star Partner of the year**

Contact Information

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Prenova

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FritoLay and Wheatstone Energy

Using a National Service and Product Provider (SPP) to Add Value and Leverage Resources





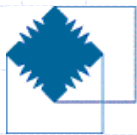
Table of Contents

- Introduction
 - Results
 - Program
 - Process
 - Benefits of a National SPP Strategy
 - Conclusions
 - Question and Answer
-

Introduction:



A 70 year old leading manufacturer in the snack food industry



WheatstoneEnergy®

A 12 year old design – build energy efficiency firm



Results:

- \$2.2 Million Energy Savings
 - 3.1 Years Average Payback
 - 96 Distribution Centers
 - 16 Production Plants
 - 4 Year Partnership
-

Program Outline:

- Design Program Overview
- Identify Capital and Savings Impact (ROI)
- Develop Buying Criteria (Simple Payback)
- Define a Funding Process
- Establish Goals and Timeline
- Execute Program Development Agreement

Process Outline:

- Design Communication Schedule
- Design and Build a Beta Site
- Design Audit Schedule
- Implement Audits and Proposal Deadline
- Review Proposals with Customer
- Develop an Implementation Strategy
- Acquire Funding
- Implement Construction Strategy

Overall Benefits to FritoLay

- \$2.2 million annual energy savings
- \$750, 000 maintenance savings
- Standardized Design and Equipment
- Knowledge and Experience Retention
- Economies of Scale - Competitive Pricing
- Minimal Internal Effort
- Energy Goals Attained



Conclusion:

- Achieved FritoLay Energy Program Goals
 - Minimized FritoLay Effort and Resources
 - Leveraged Wheatstone Skills and Resources
 - Produced Win/Win Results
-

Question and Answer

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Questions & Discussion

Energy Awareness Month



October is Energy Awareness Month



Employee Awareness Posters



www.energystar.gov/energymonth

Upcoming Web Conferences



November 17 – Increasing Energy
Performance with CHP

January 19 – ENERGY STAR Update

www.energystar.gov/networking



Thank You!