



ENERGY STAR

Increasing Energy Performance Across The Organization

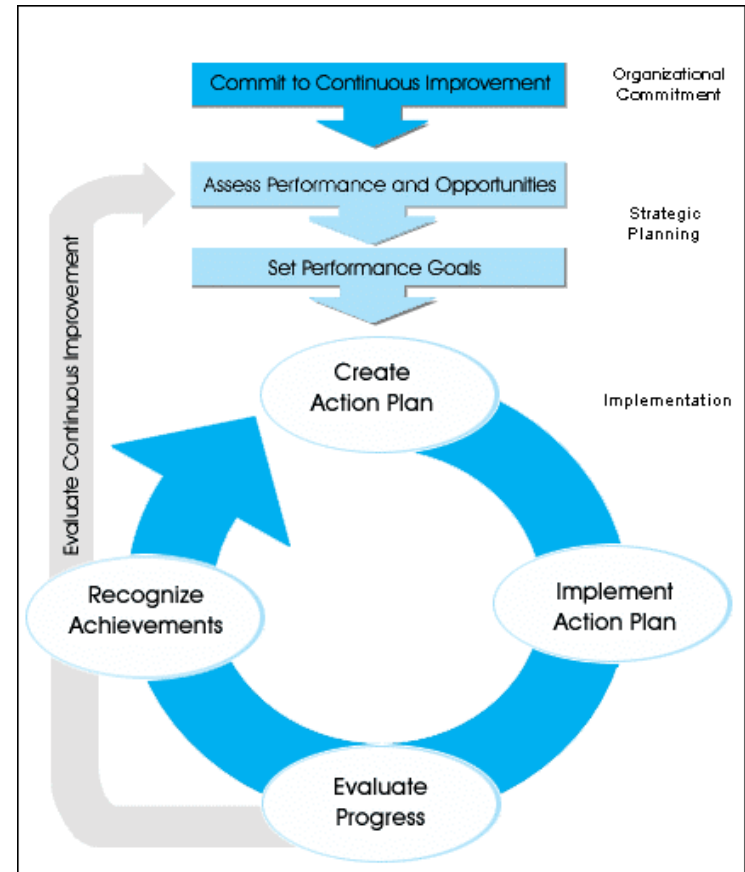
October 22, 2003



ENERGY STAR

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**





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Web Conference Tips

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



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Today's Web Conference

- Welcome
- Kathy Loftus – Shaw's Supermarkets
- Thomas Bean – Verizon
- Questions & Discussion
- Announcements



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Managing Multiple Facilities

Successful Programs Have:

- Strong organizational commitment to energy management
- Solid Energy Team
- Effective Monitoring & Tracking Systems
- Establish baselines & goals

CLEAN
AIR



COOL
PLANET



Energy and Environmental Management at Shaw's Supermarkets, Inc.

Kathy Loftus,

Director of Energy and Environmental
Management

Shaw's Supermarkets, Inc.

Energy Star Networking Web Conference
October 22, 2003



Shaw's Environmental Policy

- Shaw's Supermarkets is dedicated to reducing our environmental impact through strategic leadership and management in all areas of our business. As part of this commitment, we work closely with our suppliers, encouraging them to implement similar practices in their businesses
- We are an EPA Energy Star Partner and Green Power Partner, as well as a Clean Air-Cool Planet partner.
- We are working with the USGBC's Retail Committee for the LEED Program.

Shaw's Supermarkets, Inc.

- Shaw's operates 191 stores and several distribution centers and offices in all New England States.
- Shaw's employees over 29,000 associates.
- Shaw's Energy Management structure is centralized, and Maintenance is mostly centralized with regional management (use in house technicians and outside contractors). however each store receives training, audits and has a local associate monitoring for energy efficiency.

Energy

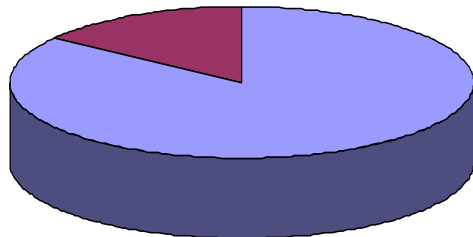
How much do we spend?

Our current utilities bill is over \$40M annually. (The industry spends \$4B.)



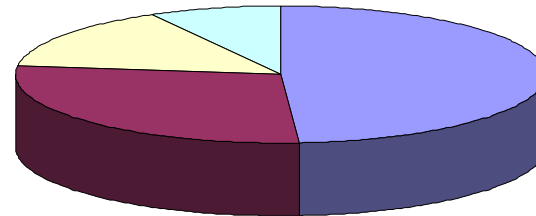
How is it spent?

10-15% Gas



85-90% Electricity

15-20% HVAC



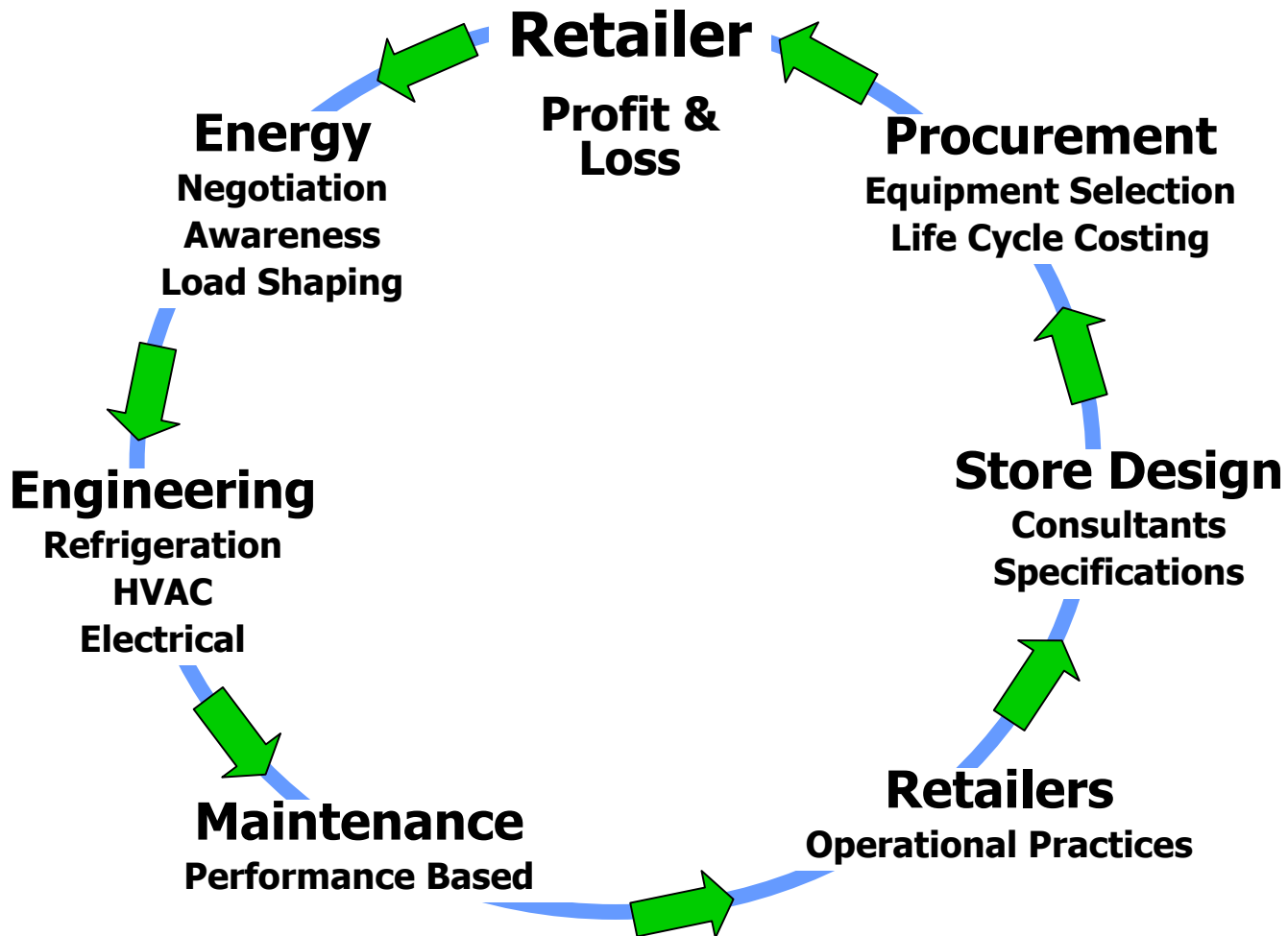
20-25% Lighting

45-50% Refrigeration

Factors impacting energy performance

- Age of equipment in store
- Geographical location
- Sales volumes
- Maintenance programs
- Utility incentives for super efficient systems, etc.

Energy and Environmental Management-The Holistic Approach



Creating a Team

- Energy, Engineering, Maintenance, Construction, Purchasing, Buying and Marketing, Corporate Communications, Food Safety, Distribution and Operations
- Consultants and Partners
- Utility Account Managers
- EPA Energy Star Program affiliates
- Energy Service Providers



Strategies for Energy Conservation, load-management and savings sustainment

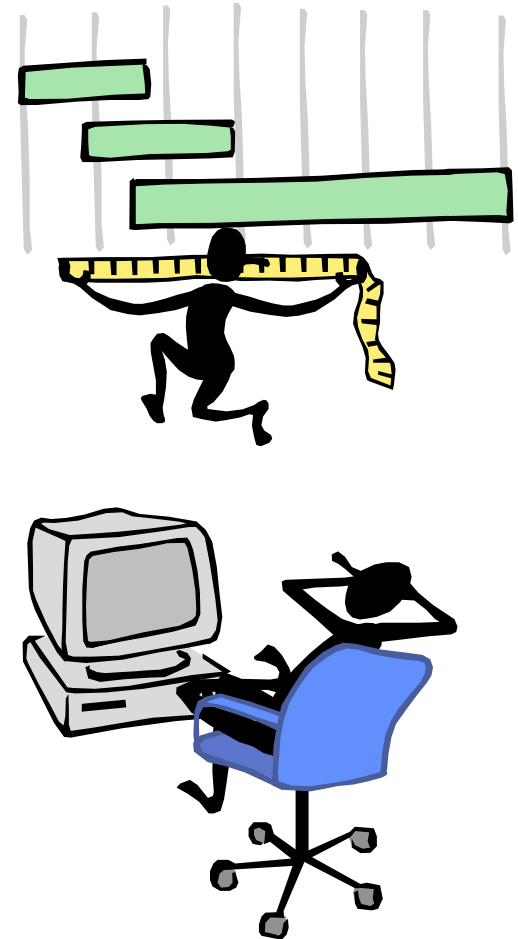
- Energy Management Systems
- Energy Sub-metering and monitoring
- Exception Reporting
- PM and O&M; Commissioning and Re-commissioning
- Benchmarking
- Portfolio Manager
- Energy Management Training
slide show, video, on-site, awards program, etc.



Energy Sub-metering and Monitoring

SMART-E Basics

- Sub-meter up electrical end uses (racks, HVAC units, lighting panels, etc. and can also meter gas & water)
- Automatic Exception reports e-mailed to energy and maintenance
- Usage patterns and exceptions are reviewed; more information may be retrieved by accessing database
- Indoor and outdoor temperature and humidity values are plotted along with graphical representation of usage on one page-for total store or for individual circuits metered.





SHAWS 343 - PORTSMOUTH NH
 365 DAY ENERGY PERFORMANCE-ANALYSIS BY CIRCUIT
 WHOLE SITE
 07/31/2001 - 07/31/2002

Doc. Ref. 2200/BPF Page 1 of 1

LOCATION		PERFORMANCE AGAINST BUDGET	VARIANCE kWh	VALUE
TOTAL		 Budget Actual Result PROFIT	259268	\$25926.89
Refrigeration	MDPR TRANSFORMER	 Budget Actual Result PROFIT	88500	\$ 8850.04
	COMPRESSOR RACK C	 Budget Actual Result PROFIT	26265	\$ 2626.52
	CONDENSER 3	 Budget Actual Result PROFIT	8076	\$ 807.68
	MDPRA TRANSFORMER	 Budget Actual Result PROFIT	85257	\$ 8525.71
Lighting	PANELS LD + LDB	 Budget Actual Result PROFIT	11965	\$ 1196.58
	PANELS LN + LNB	 Budget Actual Result LOSS	-5270	\$ -527.06
	PANELS LE + LEA + LEB	 Budget Actual Result PROFIT	23404	\$ 2340.47
	PANEL L1	 Budget Actual Result LOSS	-14200	\$ -1420.02
HVAC	HVAC UNIT 1	 Budget Actual Result PROFIT	28806	\$ 2880.63
	PANEL MH	 Budget Actual Result LOSS	-1887	\$ -188.79
Other	MDPL TRANSFORMER	 Budget Actual Result PROFIT	8351	\$ 835.13

Energy Performance by Circuit

Sustainable Savings

Internal Reporting to Executive Management, Operations, Engineering & Maintenance

Available By:

- Individual Store
- Region
- Store By Store for the Entire Chain



SHAWS - ALL SITES
7 DAY ENERGY OVER USAGE
ENERGY OVER USAGE
01/24/2001 - 01/31/2001

Doc. Ref. 2200/EXC Page 1 of 1

LOCATION	COST/WEEK (\$)	RESPONSE TIME	ACTION
478-Bangor ME LD + LND	-378.21	Immediate	Energy Dept
481-Waterville ME MOTOR CONTROL CTR	-231.89	Immediate	Maintenance
391-Royal Ridge NH RACK B	-193.21	Next day	Maintenance
HVAC 2	-133.42	Within 2 days	Energy Dept
111-Pawtucket RI RACK B	-156.16	Next day	Maintenance
RACK A	-118.96	Within 2 days	Maintenance
PANEL LN	-91.36	Within 5 days	Energy Dept
126-Woonsocket RI LD	-126.88	Within 2 days	Energy Dept
124-Raynham MA PANEL DP2	-115.73	Within 2 days	Maintenance
341-Peabody MA MAIN HVAC	-98.45	Within 5 days	Energy Dept
464-North Windham HVAC-1	-90.09	Within 5 days	Energy Dept
356-Laconia NH XFMR PNL MDPL	-89.50	Within 5 days	Energy Dept
412-Berlin Corners VT T1 DP-1	-87.38	Within 5 days	Maintenance

Energy Over Usage

Top 13 Offending Circuits Highlighted

Event Management Targeted By:

- Site
- Circuit
- Cost to Business
- Escalation Process
- Department



SHAWS -ALL SITES
 7 DAY EUD EXECUTIVE SUMMARY
 POWER
 07/31/2002 - 08/07/2002

Doc. Ref. 2250/EXM Page 1 of 1

Energy Usage Density

Store Design Analysis

SITE NAME	Average energy usage per 100sq ft					Energy Usage Density
	5	10	15	20	25	
Store 102						28.48
Store 33						28.12
Store 56						27.95
Store 176						27.84
Store 132						27.69
North Attleboro MA						27.42
East Boston MA						27.10
Weymouth MA						27.00
Whalley Ave CT						26.32
Easton Ma						26.26
Waterbury CT						26.26
Clinton CT						25.64
Woonsocket RI						25.55
Lakewood RI						25.52
North Windham						25.42
Shelton CT						25.31
Stoughton MA						24.88
Cohasset MA						24.85
Hanover MA						24.82
Ravnham MA						24.72
Newburyport MA						24.66
Sturbridge Ma						24.57
Brunswick ME						24.51
Goldstar Blvd MA						24.49
Westerv RI						24.48
Fall River MA						24.35
Merrimack NH						24.23
Randolph MA						24.20
Scarborough ME						24.17
Willimantic CT						24.08
Webster MA						24.02
Shrewsbury MA						23.92
North Conway NH						23.82
East Providence RI						23.80
Milford MA						23.78
East Brockton MA						23.69
Barrington RI						23.60
Medfield MA						23.60
Saco ME						23.56
Dartmouth MA						23.51

- Prototype
- Age
- Region
- Sales Area
- Ground Floor Area
- Linear Feet of Cases
- Total Refrigeration Load

Average for Shaws -All Sites = 20.35

Energy Conservation Results

- Reduced Installed HVAC Capacity By:
20 Tons; also reduces capital costs
- Reduced Lighting Costs By:
10-40%-IRRs of 25-50%
- Reduced Refrigeration System Usage By:
5-15%
- SMART-e IRR:
25-50%

Energy Efficiency

- Shaw's has Energy Star Labels for 8 of its stores -at least 1 in every New England State and based on scores of those 8, we estimate at least 125 of the remaining stores are eligible for labels.



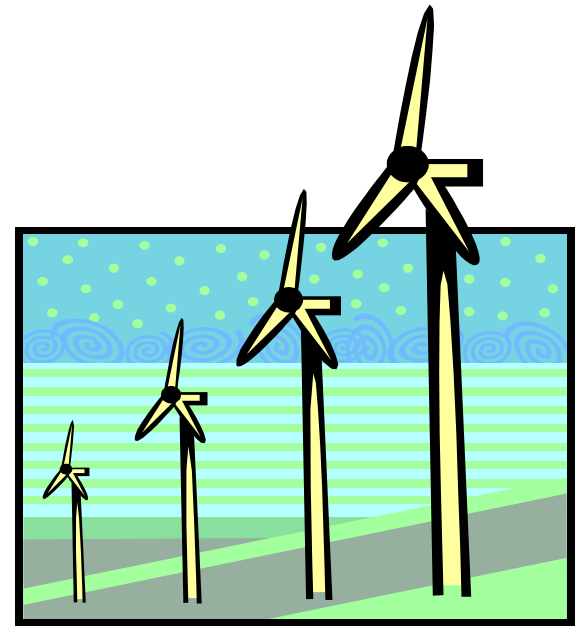
An Environmental Target

- By March 2006, eliminate CFCs from remaining 2 stores as part of the Master Development Schedule and install refrigerant leak detection systems in 20 additional locations."
- Shaw's began converting systems back in early 1990s and has only two (fairly newly acquired) stores left to convert.
- Leak detection and sub-metering use same communications.



An Environmental Target...

- Reduce CO₂/ft² by an additional 5% through 2005 from a baseline of 1996.



Renewable Energy Purchase

Shaw's has a target that 5% of its energy requirements will be supplied from renewable resources by 2005, and 10% by 2010, providing feasible sources are available.



Rhode Island Green Power Challenge



Renewable Energy-Strategic Leadership Area

- We are working with the Mass Renewable Trust on several projects that will include solar power on the roof of at least one store and investigation into other alternative energy systems. A portion of these three stores' energy requirements will be met through renewable resources.
- We are reviewing wind and solar energy REC purchases as well as evaluating assisting with developing farm methane power generation.



Key Lessons Learned

- Measure and verify!
- Get everyone involved, educated and championing programs
- Use internal resources where feasible, but hire third party when required (and for new store commissioning, but be clear about process and desired results).
- By proving results through metering and billing and benchmarking and labeling, and through smart procurement, it's easier to sell the next step of "greening" energy supply requirements.

Increasing Energy Performance Across Verizon

ENERGY STAR Web Conference



Tom Bean
Manager- Team Energy
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Team Energy:

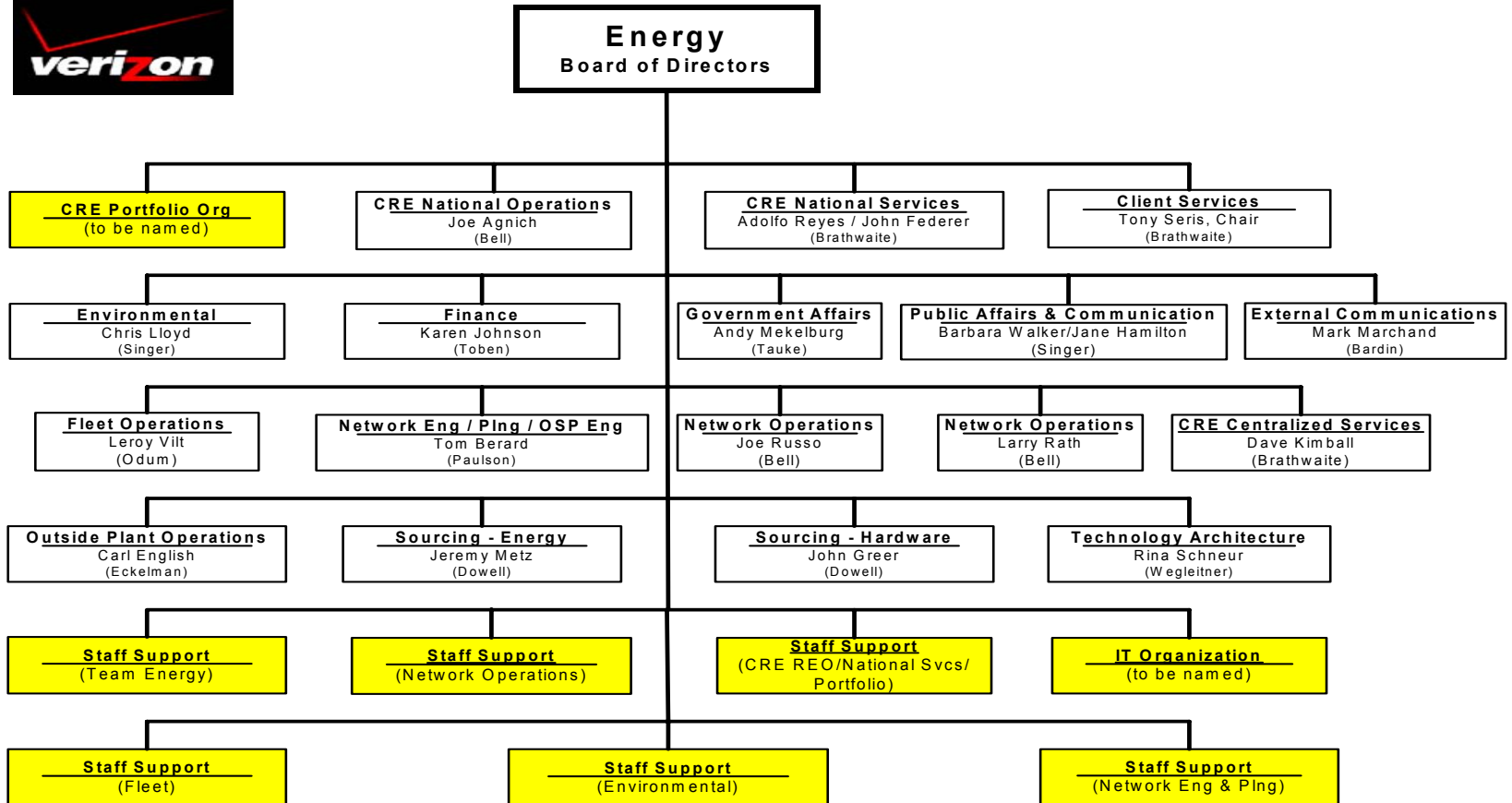
- **Formed May, 1999**
- **Prior to TE electric bills decentralized- uncontrolled**
- **Centralize billing for \$0.5 B for electricity**
- **Control expenditures/consumption objectives**

Mission: To facilitate the cost effective management of Verizon's energy.

Objectives...

- To reduce overall energy consumption and cost through comprehensive energy programs and initiatives in support of field operations.
- To promote energy and environmental awareness through effective employee communications and programs.
- To formulate key energy strategies through the Energy Board of Directors and partnerships with key customers, departments, and suppliers.

- **New Organizations Key - Focus
GHG/Energy Reductions**
- **GHG/Consumption Reduction
Objectives**



Operations...

- Area Operations Advocates
- Performance Measurement
- Energy Audits
- Energy Star Criteria/Certification
- Target Buildings
- No Cost/Low Cost Energy Reduction Initiatives
- Identification of Energy Capital Projects (ECM)
- Data Integrity (EDMS)
- Standard Reports (EDMS)

Strategic...

- Portfolio Work Flow Process - (Energy Considerations)
- Standards Committee/SAC - (Energy Considerations)
- Capital Planning-Energy Conservation Measures (ECM)
- Advanced Energy Solutions Partnership (Energy Mgmt)
- Sourcing, Public Policy & Energy Board Initiatives
- New Technology/Alternative Fuels
- Central Office Temperature Standardization
- Enterprise Solution/DDC Optimization
- GHG Emissions Reduction Initiatives

Awareness...

- Internal/External Communications
- Energy Champions
 - solicitation
 - training
 - recognition
- Team Energy website
- CRE Website
- Verizon Energy Board of Directors

Electricity 2002 vs 2001...

	<u>2002 Act</u>	<u>2001 Act</u>
• Expense:	\$413.8M	\$417.2M
• Consumption:	4.76B kwh	4.79B kwh

Initiatives...

Operational & Energy Management:

- Energy Solutions Partnership
- Field Energy Audits
- Target Building Criteria
- Capital Program Development (ECM)
- SAC/Std's Cmt/Portfolio Work Process
- DDC Optimization

Initiatives...

Strategic & New Technology:

- GHG Emissions Reduction Surveys
- Sourcing Strategies
- Upward Pressure Analysis
- Central Office of the Future
- Fuel Cell Pilots

Initiatives...

Capital ECM (\$000):

	2002 Appvd	2003 Appvd
Total	\$18,400	\$11,500

- Process to be developed using target building initiative and energy audit surveys to identify and feed the energy conservation measure (ECM) capital program.
- Approx. \$20m/year savings since formation of Team energy in 1999. Seek 2 - 3 year paybacks.

Initiatives...

Energy Board of Directors:

- RFP Power Consumption
- C.O. Comprehensive Power Analysis
- Network Equipment Removal
- EPA Energy Star C.O. Benchmarking
- Network Equip Flour Light Stds
- Energy Scorecard & Benchmarking
- Clean Engine Technologies
- GHG Emissions Reduction Initiatives

2003 Specific Team Energy Initiatives...

- Objective to reduce consumption by approx. \$20M with initiatives implemented 2003
- 2,000 Target Buildings-Reduce Consumption 3% or 80M pounds GHG of CO₂
- Network Advisory- Target Verizon's Core DC power in switchrooms- 49M pounds of CO₂
- Capital Energy Projects- 2 to 3 year paybacks- reduce 49M pounds CO₂.
- Engine Block Heaters- Reduce block temperature- save 57M pounds CO₂

- **Question & Answer**
- **Thank you!**



ENERGY STAR

Upcoming Web Conferences

**November 19, 2003 - Communicating
To Financial
Officers**

**January 21, 2004 – ENERGY STAR
Update**



ENERGY STAR

2003 Networking Meeting

December 3, 2003

**ENERGY STAR Partnership
Networking Meeting
Washington, DC**

www.energystar.gov/networking



Award Applications

- Due December 5th 2003
- Applications available on web site
- Note New ENERGY STAR Shipping Address –
- 1310 L St. NW, Washington DC 20005



Thank you for participating!