ISM's IMPACT 2002

A TOTAL PRICE/COST APPROACH TO SUPPLY MANAGEMENT

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UTILITIES

An Overlooked Source of Cost Savings

INFORMATION IN THIS PRESENTATION

1. Analyzing Utility Costs

2. Utility Bill Content

3. Utility Deregulation

4. What Companies need to do to Control/Reduce Utility/Energy Costs

5. What to do Now!

6. Actual Utility/Energy Cost Reduction Examples

PRESENTATION SUMMARY

1. Many savings opportunities exist today in utility and energy costs, regardless of the status of deregulation in a given state.

2. Knowledge is the key to a firm's ability to identify and assess specific savings opportunities.

3. A well-planned and executed strategy can reduce utility/energy expenditures and risks without the need for major capital outlays.

4. Choosing to ignore utility/energy costs will subject your organization to preventable cost and usage risks.

1.

ANALYZING UTILITY COSTS

ANALYZING

Electricity, Natural Gas, Water/Sewer Costs

Obtain from
Utility Service Representative

- ✓ **Complete Tariff or**
- ✓ **Rate Schedule**

Obtain from
State Regulatory Body

- ✓ **Experimental Rate Tariffs**
- ✓ **Off-Tariff Schedules**
- ✓ **Unregulated Marketing Affiliate Programs**

UTILITY DATA REQUEST FORM

(Electricity, Natural Gas, Water/Sewer)

This sample letter is shown too assist in obtaining data from a utility company service representative. For expediency, data can be requested by telephone. (Always record the day, hour, and utility person's name if data is requested by telephone.)

Dear (Service Representative of Utility Company):

As part of an ongoing program in our company to reduce operating costs, we are evaluating various areas for cost reduction investigation. One of these areas is (insert commodity name—electricity, natural gas, water or sewer). Please provide the following information as soon as possible:

1. Complete tariff schedule including riders, attachments, etc.
2. Experimental rates, if applicable.
3. Off-tariff schedules, if applicable.
4. Unregulated marketing programs, if applicable.

2.

UTILITY BILL CONTENT

Sample of an Actual Electricity Billing (Rate LGS)

ACCOUNT NUMBER	000-0000
SERVICE AT	XYZ Street Any City/Any State

TOTAL AMOUNT DUE BY	(NET) Jun. 15, 2002	$18,366.05
AMOUNT PAYABLE AFTER DUE DATE (GROSS + 1.5%)		$18,614.54

TYPE OF READING	METER NUMBER	SERVICE FROM TO	NO DAYS	METER READING PREVIOUS	METER READING PRESENT	READING DIFFERENCE	METER MULTIPLIER	THERM FACTOR	USAGE
Total kWh	02820215	05/01–05/31	31	34731.0101	35315.9034	584.8933	300.0000		1754678.0000
Peak kW	02820319	05/01–05/31	31	0.0000	1.9180	1.9180	300.0000		575.4000

SUMMARY

Total kWh	1754678.0000	Peak kW	575.4000
Billing kW	575.4000		

METERED ELECTRIC SERVICE BILLING

Rate: LGS – General Service **Service From:** 05/01/2002 **To:** 05/31/2002

Demand Charge	575.40	kW	@	$3.7900000	$2,180.77	
Energy Charge/Hours Used (575.40 x 150)	86,310.00	kWh	@	$0.0784000	$6.766.70	
Energy Charge/Hours Used (575.40 x 200)	115,080.00	kWh	@	$0.0591000 (-32%)	$6,801.23	
Customer Charge					$66.00	
Total Service Amount						$15,814.70
State Tax (6%)					$948.88	
Municipal Charge (10%)					$1,581.47	
Total Tax Related Charges						$2,530.35

MISCELLANEOUS CHARGES

Electric Submeter Rental	$21.00	
Current Amount Due		$18,366.05
Prior Amount Due		$0.000
TOTAL AMOUNT DUE		**$18,366.05**

TARIFF SCHEDULE
FOR LGS RATE SCHEDULE

SERVICE CLASSIFICATION ¾ (LGS) LARGE GENERAL SERVICE RATE

1. **RATE APPLICATION:** This rate is applicable to all secondary service to—(1) any non-residential customer whose billing demand in any summer month exceeds **100 kW**, or (2) at customer's request, to any other non-residential customer.

2. **CHARACTER OF SERVICE SUPPLIED:** Company will specify and provide a standard single- and/or three-phase alternating current **secondary** service voltage.

3. **ENERGY BILLING:** The lesser of customer's maximum monthly metered demand or Rider I billing demand, if applicable, shall be used to apportion customer's kilowatt-hours to the kWh per kW energy rate steps for billing purposes. In addition, customer's proportion of Base and Seasonal billing demands, as defined in this rate, shall be used to initially apportion customer's kilowatt-hours to the Base and Seasonal energy rate steps for billing purposes during the winter billing season.

4. **DEMAND BILLING:**

   a) **Total Billing Demand.** The monthly Total Billing Demand shall be the maximum metered demand during the current month or, where elected by customer, the billing demand determined in accordance with Rider I, Off-Peak Demand Provisions, but in no event less than 100 kW.

   b) **Base Billing Demand.** The monthly Base Billing Demand, used only to apportion kilowatt-hours during the Company's winter billing season, shall be the Total Billing Demand during customer's immediately preceding May, October or maximum summer billing month, or customer's current winter month's Total Billing Demand, whichever is less.

   c) **Seasonal Billing Demand.** The monthly Seasonal Billing Demand, used only to apportion kilowatt-hours during the Company's winter billing season, shall be the portion of customer's current month's Total Billing Demand in excess of customer's Base Billing Demand.

   d) **Customers Without Prior Billing Determinants.** Customers on this rate who did not establish a billing demand during preceding billing periods shall have all kilowatt-hours billed on the Base Energy rate steps during the succeeding winter billing periods. After subsequent billing periods are completed, the customer's billing during the preceding winter will be reviewed using the Base Billing Demand determined from the following May billing period and a refund given if appropriate.

TARIFF SCHEDULE
FOR LGS RATE SCHEDULE

SERVICE CLASSIFICATION ¾ LARGE GENERAL SERVICE RATE (Continued)

4. DEMAND BILLING (Continued)

e) Demand Meters. When normal use of an existing customer or the estimated use of a new customer exceeds 25,000 kWh per month for two consecutive summer billing months, or Company has reason to believe that customer's summer demand exceeds 100 kW regardless of his kWh use, Company will install a demand meter for purposes of measuring customer's demand.

5. OPTIONAL TIME-OF-DAY (TOD) SERVICES: Applicable at customer's option for all Large General Service usage, subject to the following provisions:

a) Customer will be transferred to this TOD rate option effective with TOD meter installation and transferred from this TOD rate option to the applicable non-TOD rate after the meter is removed.

b) Customer electing this TOD option shall remain on said option for a minimum period of twelve (12) months, provided however, that customer may discontinue this option within the first ninety (90) days thereunder subject to the continued payment of the TOD customer charge, in lieu of any other customer charge, for the full twelve (12) month term of this option.

c) Any customer canceling this TOD option cannot thereafter resume billing under said option for a period of one year following the last billing period on the TOD option.

(Meter Combination)

6. CUMULATION OF SERVICES: Service provided through multiple meters to the same customer on the same premises and cumulated for billing purposes under this Service Classification, prior to May 5, 1990, may continue to receive such billing. Unless otherwise required for Company's engineering or other reasons, any additional services installed at customer's request and agreed to by Company on and after May 5, 1990, will not be cumulated or otherwise combined for billing purposes with any other service supplied to customer.

7. GENERAL RULES AND REGULATIONS: In addition to the above specific rules and regulations, all of Company's General Rules and Regulations shall apply to the supply of service under this rate.

TARIFF SCHEDULE
FOR LGS RATE SCHEDULE

SERVICE CLASSIFICATION LARGE GENERAL SERVICE RATE (Continued)

RATE BASED ON MONTHLY METER READINGS

Summer Rate (Applicable during 4 monthly billing periods of June through September)

Customer Charge:		$66.00 per month
Energy Charge:		
First 150 kWh per kW of Billing Demand	@	7.84¢ per kWh
Next 200 kWh per kW of Billing Demand	@	5.91¢ per kWh
All Over 350 kWh per kW of Billing Demand	@	3.96¢ per kWh
Demand Charge: Total Billing Demand	@	$3.79 per kW

Winter Rate (Application during 8 monthly billing periods of October through May)

Customer Charge:		$66.00 per month
Base Energy Charge:		
First 150 kWh per kW of Base Demand	@	4.91¢ per kWh
Next 200 kWh per kW of Base Demand	@	3.68¢ per kWh
All Over 350 kWh per kW of Base Demand	@	2.86¢ per kWh
Seasonal Energy Charge: Seasonal kWh	@	2.86¢ per kWh
Demand Charge: Total Billing Demand	@	$1.35 per kW

Optional Time-of-Day Adjustments

Additional Customer Charge - (All Months) $14.00 per month

Energy Adjustment (Cents per kWh)

		On-Peak Hours (1)	**Off-Peak Hours (1)**
Summer	(June - September billing periods)	+0.88¢	-0.49¢
Winter	(October – May billing periods)	+0.27¢	-0.15¢

(1) On-peak and off-peak hours applicable herein shall be as specified in Rider I, paragraph A.

AREAS TO INVESTIGATE IN THE LGS ELECTRICITY BILLING

1. Voltage level.

2. Demand level (kW)

3. Demand relationship to Usage (kW to kWh)

4. Opportunity to utilize Time-of-Day Rate option

ELECTRICITY DEMAND (kW)

IT'S IMPACT ON UTILITY COSTS!

(Sample billing example)

Demand (kW) on Sample Billing

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Energy Charge/Hours Used (575.40 x 150)	86,310.00	kWh	@	$0.0784000	$6.766.70	
Energy Charge/Hours Used (575.40 x 200)	115,080.00	kWh	@	$0.0591000 (-32%)	$6,801.23	
Customer Charge					$66.00	
Total Service Amount						$15,814.70
State Tax (6%)					$948.88	
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ELECTRICITY USAGE (kWh)

It's Impact on Utility Costs!

(Sample billing example)

Usage (kWh) on Sample Billing

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SERVICE AT	XYZ Street Any City/Any State

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Energy Charge/Hours Used (575.40 x 150)	86,310.00	kWh	@	$0.0784000	$6.766.70 →	74% of bill
Energy Charge/Hours Used (575.40 x 200)	115,080.00	kWh	@	$0.0591000 (-32%)	$6,801.23 →	
Customer Charge					$66.00	
Total Service Amount						$15,814.70
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3.

UTILITY DEREGULATION

What is Deregulation?

- Deregulation, as it applies to electricity and natural gas, is the removal of the commodity portion of the retail customer rate from the regulation by the local State Regulatory Agency (deregulation).

- This deregulated-commodity portion of the retail rate can be competitively priced by third-party providers. Federal regulatory implications in the retail rate are not affected/changed by deregulation.

What Does Deregulation Effect?

It is the deregulation of the commodity portion of the retail electricity/natural gas rate **only**.

- The commodity portion of the retail **electricity** rate is typically between **20%–50%** of the total rate cost.
- In **natural gas**, the commodity portion of the retail rate is typically between **50–70%** of the total rate cost.

ELECTRICITY DEREGULATION

Deregulated Electricity Flow Chart

DEREGULATED

1) **Electricity Supply**
2) **Agent Charge**

Price Point No. 1 (Commodity Cost)

REGULATED ¾ FEDERAL

3) **Interstate Transmission Grid**
(Usage Charge, Line Loss Charge, Miscellaneous Access Charges, Fees and Taxes)

Price Point No. 2 (Total Costs for Items #1, 2, & 3)

4) **SERVING UTILITY RECEIPT METER POINT**

REGULATED – STATE

5) **Serving Utility Intrastate Distribution Grid**
Demand charge, Intrastate distribution costs, Distribution line loss, Transformation costs, Customer meter costs, Stranded investment recovery costs, Miscellaneous fees/costs

Price Point No. 3 (Total Cost for Items #1, 2, 3, 4, & 5)

6) **CUSTOMER METER USE POINT CHARGE**

Status Of Electricity Deregulation In The United States

Deregulation Legislation Enacted
(24)

Note: Deregulation legislation enactment in a state does not necessarily mean that all utilities in that state are fully deregulated at this time.

Arizona	Massachusetts	Ohio
Arkansas	Michigan	Oklahoma
Connecticut	Montana	Oregon
Delaware	Nevada	Pennsylvania
District of Columbia	New Hampshire	Rhode Island
Illinois	New Jersey	Texas
Maine	New Mexico	Virginia
Maryland	New York	West Virginia

Deregulation Investigation Ongoing
(18)

Alaska	Louisiana	South Carolina
Colorado	Minnesota	Utah
Florida	Mississippi	Vermont
Indiana	Missouri	Washington
Iowa	North Carolina	Wisconsin
Kentucky	North Dakota	Wyoming

Deregulation Not Instituted for Any User
(8)

Alabama	Kansas
Georgia	Nebraska
Hawaii	South Dakota
Idaho	Tennessee

Deregulation/Reregulation
(1)

California

NATURAL GAS DEREGULATION

Deregulated Natural Gas Flow Chart

DEREGULATED

1) **Natural Gas Supply**
2) **Agent Charge**

Price Point No. 1 (Commodity Cost)

REGULATED ¾ FEDERAL

3) **Interstate Pipeline System**
(Usage Charge, Pipeline Loss Charge, Miscellaneous Access Charges, Fees and Taxes)

4) **CITY GATE RECEIPT METER POINT**

Price Point No. 2 (Total Costs for Items #1, 2, & 3)

REGULATED – STATE

5) **Serving LDC Intrastate Pipeline System**
Intrastate distribution costs, Pipeline loss costs, Customer meter costs, Miscellaneous fees/costs

6) **CUSTOMER BURNER TIP METER USE POINT CHARGE**

Price Point No. 3 (Total Cost for Items #1, 2, 3, 4, & 5)

Status Of Natural Gas Deregulation In The United States

Deregulation Legislation Enacted
(5)

Note: Deregulation legislation enactment in a state does not necessarily mean that all utilities in that state are fully deregulated at this time.

New Jersey	Ohio
New Mexico	West Virginia
New York	

Deregulation Investigation Ongoing
(2)

Maine	Oklahoma

***Deregulation for Small Users Not Instituted**
****Deregulation for Large Users Instituted**
(18)

Arizona	Nevada
Connecticut	New Hampshire
Florida	North Carolina
Indiana	North Dakota
Iowa	Rhode Island
Kansas	Tennessee
Minnesota	Texas
Mississippi	Utah
Missouri	Washington

***Deregulation for Small Users Partially Instituted**
****Deregulation for Large Users Instituted**
(10)

California	Michigan
Delaware	Montana
Kentucky	Pennsylvania
Maryland	South Dakota
Massachusetts	Vermont

Deregulation for All Users Partially Instituted
(8)

Colorado	Virginia
Georgia	Washington DC
Illinois	Wisconsin
Nebraska	Wyoming

Deregulation Not Instituted for Any User
(8)

Alabama	Idaho
Alaska	Louisiana
Arkansas	Oregon
Hawaii	South Carolina

*****Small users, typically residential/small commercial customers.
******Large users, typically medium/large commercial/industrial customers.

4.

WHAT COMPANIES NEED TO DO TO CONTROL/REDUCE UTILITY/ENERGY COSTS?

BECOME PROACTIVE!

Doing nothing WILL INCREASE your costs and risks!

HOW COMPANIES CAN CONTROL/REDUCE UTILITY/ENERGY COSTS?

1. Collect/understand cost/usage data.

2. Understand current status of utility deregulation.

3. Understand individual facility utility usage characteristics.

4. Manage commodity and energy cost/usage.

WHAT COMPANIES CAN CONSIDER INTERNALLY TO CONTROL/REDUCE UTILITY/ENERGY COSTS?

1. Understanding of commodity and energy service contracts and their long-term implications.

2. Corporate agreement on an energy strategy.

3. Internal organizational factors.

5.

WHAT TO DO NOW?

Develop A Utility/Energy Cost Control/Reduction Strategy

BEGIN BY—

1. Knowing your costs.

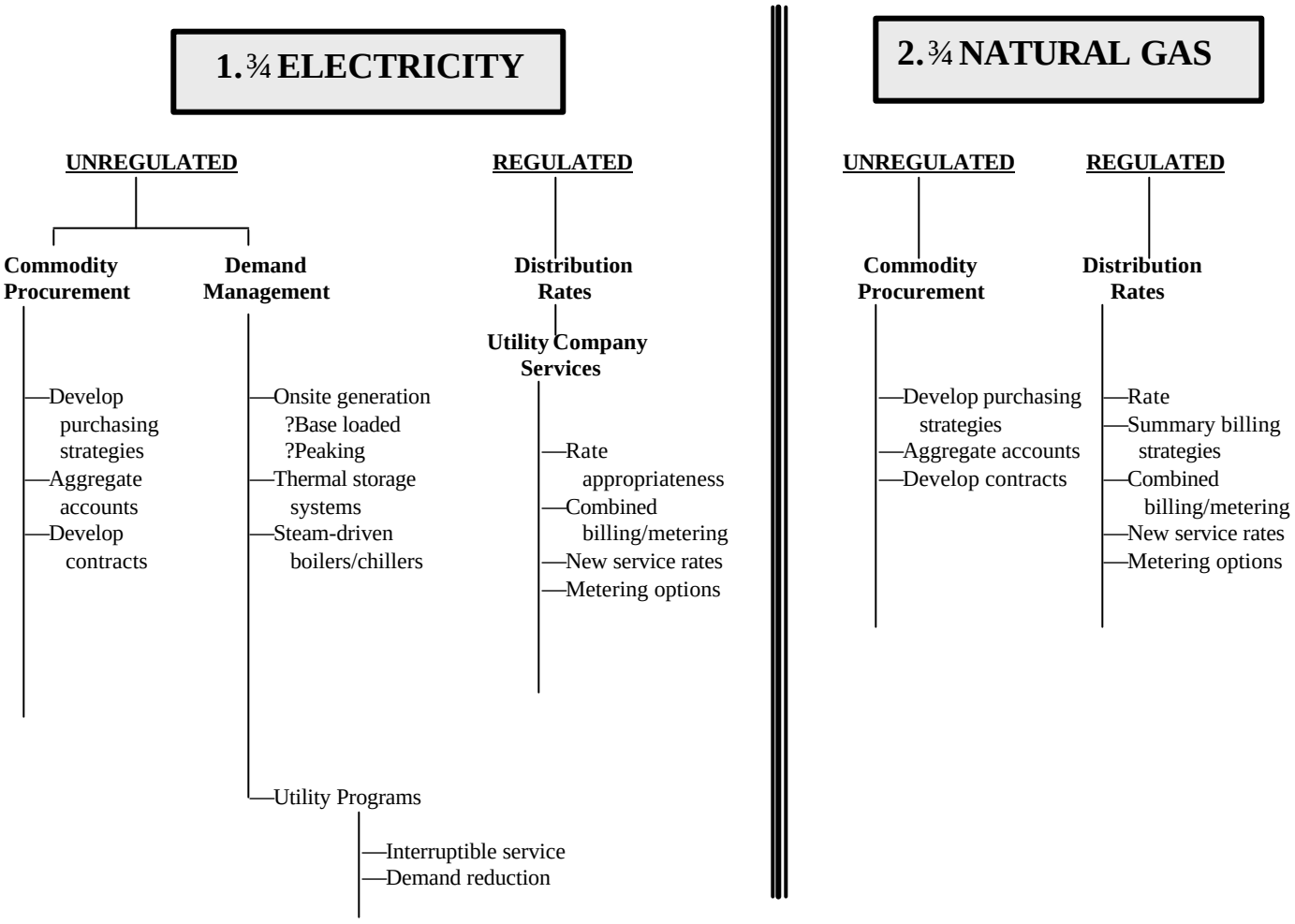
2. Assessing your savings potentials.

3. Utilizing internal/external expertise to reduce utility costs.

What Any Successful Energy Strategy Should Include?

Electricity
Natural Gas
Water / Sewer
Petroleum Distillates
(I.e.—fuel oil, propane, etc.)

AREAS TO REDUCE ENERGY COSTS
(Electricity / Natural Gas)



AREAS TO REDUCE ENERGY COSTS
(Water/Sewer / Petroleum Distillates)

3. ¾ Water/Sewer

UNREGULATED

- Leaks
- Lawn watering
- Process water usages
- Cooling tower usage/losses
- Swimming pool usages
- Humidification usages

REGULATED

- Rate appropriateness
- Combined billing/metering
- Fire hydrant charges
- Refuse charges

4. ¾ Petroleum Distillates

UNREGULATED

- Purchasing strategies
- Hedging strategies
- Aggregation of energy sources
- Substitution for/augmentation of electricity/natural gas processes

REGULATED

- (Not applicable)

6.

ACTUAL UTILITY/ENERGY COST REDUCTION EXAMPLES

1. **Major State University**

2. **Manufacturing Organization**

3. **Diversified Manufacturing Organization**

4. **Nationwide Banking Organization**

Major State University Campus

Overview:
A State University campus with a single utility natural gas account to serve all the campuses' primary heating requirements with annual natural gas costs of over $1.25MM. This is a typical heating customer with primary natural gas usage during winter months.

Goal:

To reduce annual natural gas costs and to ensure delivery of commodity as when served only through the Utility Company.

Issues:

- Never transported gas using a competitive supplier. Always purchased both gas and distribution services from their local gas utility company.
- No internal expertise in competitive energy commodity contracts. No knowledge of commodity pricing. Unfamiliar with supplier credentials.
- Newly appointed operations and Administrative Vice President. No knowledge of past gas requirements.

Solutions:

1. Determined gas requirements including volume and type of service (Firm or Interruptible). Determined tolerance for interruptions in supply.
2. Reviewed Utility Rate options. Interviewed local gas utility for optional services. Solicited qualified supplier proposals. Finally negotiated reduced cost of gas through the local gas utility without the need to change any services requirements.
3. Contract fixed the price of natural gas through the winter heating season eliminating the exposure to typically higher winter prices.

Overall Natural Gas Cost Reductions ¾ 10%

($125,000)

Manufacturing Organization

Overview:
Diversified components manufacturer, with annual utility costs of approximately $8MM annually in over 20 locations nationally.

Goal:
To reduce their costs and complete the procurement of electricity without subjecting operations to any new risks.

Issues:
- Higher cost of electricity than competitors in other regions of USA.
- Zero tolerance for interruptions in productions schedules.
- Multiple plants with varying degree of historical information.
- No track record of electricity supplier's abilities to fulfill electricity commodity contract obligations.
- Significant degradation of electricity service due to mergers of utility companies serving client—affected the level of service (constantly changing Reps) and the client's utility accounts numbers.

Solutions:
1. Performance commodity contract with marketer to provide electricity ($6.0MM total), where separate client accounts were aggregated for greater delivery volume tolerances thereby significantly reducing the potential to pay Peak hourly electricity commodity costs in summer.
2. Negotiated electricity commodity supply price based on actual generation costs NOT based on historical rates paid.
3. Rate opportunities – Changed 1 facility to Primary for a 6% annual savings. Requested another rate change that reduced annual account cost 6%.
4. Looking at onsite generation opportunities since many sites are on adjacent properties where client could serve more than one plant's needs through one generator.

Overall Electricity Cost Reductions ¾ 5?7%

($400,000 / $560,000)

Diversified Manufacturing Organization

Overview:
A diversified industrial company with operations in many product lines, with annual utility costs of approximately $20MM annually in over 10 locations nationally.

Goal:
To reduce operating costs in order to increase profitability

Issues:
- Multitude of cost reduction opportunities throughout plants
- Lack of capital to complete energy measures designed to reduce costs
- Reluctance to Performance Contracting because of lack of uniform savings measures
- Independent plant management with profit responsibilities and incentives
- Wide range of energy unit costs among plants
- Lack of energy plan for corporation

Solutions:
1. Review of each plants immediate savings opportunities at a local level
   - Interruptible versus Firm rates for electricity where supply during interruptions is contracted for in advance of interruptions and backed up by an insurance policy
2. Agreement to combine all plants to increase cost reductions
   - Opportunities include compressed air system solutions
   - Waste heat recovery
   - Manufacturing process improvements through VSD motors
   - Lighting

Overall Utility/Energy Cost Reduction Potential ¾ 6?9%

($1,200,000 / $1,800,000)

Nationwide Banking Organization

Overview:

One of the top 25 largest banks in the U.S. with annual utility costs of over $18MM.

Goal:

Bank wanted to take control of their utility and energy costs, and reduce their corporate facility operating costs and risks.

Issues:

- Many small commercial accounts (1200 Branches and 1600 ATMs)
- 25 large commercial accounts (Offices, Computer centers, credit card processing, etc.)
- Managing late payments on Utility bills required significant internal bank resources
- Combination of direct ownership, leased and leased with utilities bill payment responsibilities for bank's facilities
- Combination of different banks brought together though years of acquisitions
- No in-house expertise concerning energy
- No resources to dedicate to tackling energy issues
- A strong facility management organization interested in doing the best things to reduce costs.
- No internal data, other than through Accounts Payable

Solutions:

1. "Bundled" solution for Utility Bill Payment, Commodity and Rate savings efforts and Energy Projects. Guaranteed savings offers from vendors between $2.2 MM and $2.5MM over five years.
2. Data – Needed to take raw data and quickly turn it into useful ongoing information. Prime use of a utility bill payment system. Needed to decide if vendor for Utility Bill Payment system was to be bundled with other services or brought in on an independent status. Will save bank time to process and check bills, reduce or eliminate late fees and provide information to secure commodities and verify savings for energy projects.
3. Commodity – Needed utility information to do commodity procurement. Did an arrangement with marketer with Market Support Generation program. Will save bank over 5% on its commodity costs.
4. Energy Projects – Implemented corporate wide energy efficiency program with a guaranteed cost, not to exceed $3MM, with guaranteed savings of $2MM annually. Bank elected to fund the program internally after considering its capital structure.
5. Contractually assured Bank guaranteed savings and an acceptable method to calculate savings. Significantly reduced the Bank's exposure to typical high price of natural gas in winter heating season for all facilities. Reduced risk of electricity commodity price spikes in summer periods for typical air conditioning requirements.

Overall Utility/Energy Cost Reductions ¾ 13%

($2,370,000 annually)

