

ON-SITE ASSESSMENT REPORT

<Engineering Firm>

Presented to:
<Customer>
<Presentation Date>

Funding by:



<Report Date>

This report is for sample purposes only. The customer's actual report will contain information and recommendations based upon the engineering firm's findings and may or may not reflect the format and recommendations contained in this sample report.

CUSTOMER SUMMARY PAGE

Customer Name: _____

Account Number(s): _____

Service Address: _____

Additional Service Address: _____

Additional Service Address: _____

Customer Contact: _____

Site Contact: _____

Phone: _____

Phone: _____

Xcel Energy Rep: _____

Energy Auditor: _____

Phone: _____

Company: _____

Fax: _____

Phone: _____

Building Type: _____

Peak Demand: _____

Electric Service Provided by: _____

Gas Service Provided by: _____

Date of Site Visit: _____

Square Footage: _____

DISCLAIMER OF WARRANTIES AND LIMITATION OF LIABILITY

The suggestions in this Energy Assessment (“Assessment”) are provided as a service to Xcel Energy customers and are based on a visual analysis of conditions observed at the time of the survey, information provided by the customer and from Xcel Energy, and costs based on the energy assessor’s experience on similar projects. The performance guidelines provided in the Assessment are for informational purposes only and are not to be construed as a design document. Xcel Energy will not benefit in any way from a customer’s decision to select a particular contractor or vendor to supply or install the products and measures suggested by the energy assessor.

Xcel Energy and the energy assessor do not guarantee that any specific level of energy or costs savings will result from implementing any energy conservation measures described in this Assessment. Xcel Energy and the energy assessor shall not, under any circumstances, be liable to the customer in the event that potential energy savings are not achieved.

Xcel Energy advises that customers check with their Xcel Energy Account Manager to determine the estimated value of their rebate (if any) and to verify that the equipment qualifies for Xcel Energy programs prior to implementation of any conservation measure. Some measures identified in this report may qualify for an Xcel Energy Custom Efficiency rebate. Custom Efficiency projects require pre-approval prior to purchase and installation. The customer is responsible for submitting project information to their Xcel Energy Account Manager to obtain pre-approval for Custom Efficiency projects and to determine the eligible custom rebate amount.

XCEL ENERGY IS PROVIDING THIS INFORMATION AS A SERVICE TO YOU, OUR CUSTOMER. THE INFORMATION AND SUGGESTIONS IN THIS ASSESSMENT ARE PROVIDED ON AN “AS IS” BASIS ONLY, AND XCEL ENERGY MAKES NO REPRESENTATIONS OR WARRANTIES OF ANY KIND WITH RESPECT TO THIS ASSESSMENT. XCEL ENERGY DISCLAIMS ALL SUCH REPRESENTATIONS AND WARRANTIES, INCLUDING BUT NOT LIMITED TO WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. Neither Xcel Energy nor any of its directors, employees or other representatives will be liable for damages arising out of or in connection with the use of this Assessment, and you, the customer, knowingly and voluntarily release Xcel Energy from any such liability in connection with this Assessment. This is a comprehensive limitation of liability that applies to all damages of any kind, including (without limitation) compensatory, direct, indirect, or consequential damages, loss of data, income or profit, loss or of damage to property and claims of third parties.

Table of Contents

- I. Executive Summary
- II. Facility and Operations Description
- III. Energy Profile
 - a. Total Annual Energy Expense
 - b. Annual Electric Consumption (kW, kWh, power factor, \$, \$/kWh, load factor)
 - c. Electric Energy End-Use Breakdown
 - d. Annual Gas Consumption (therms, \$, \$/CCF, DD, CCF/DD)
 - e. Gas Energy End-Use Breakdown
- IV. Energy Conservation Opportunity
 - a. Summary of Recommendations
 - b. Conservation Opportunity Analysis
 - c. Strategic Opportunity Analysis
- V. Additional Information
- VI. Equipment Inventories (as appropriate)
- VII. Glossary

Executive Summary

_____ (customer name) requested that Xcel Energy perform an energy assessment to identify energy-related opportunities that show potential for improvement and investment options. This is the first step toward developing a long-term energy plan for _____ (customer name). _____ (energy assessment service provider) visited the customer's business site on _____ (date) and met with _____ (contact name) . This energy assessment recommends strategic opportunities such as eligibility for rate discounts and areas for energy-related process improvement and describes key energy conservation opportunities.

Comments regarding key conservation opportunities

Comments regarding key strategic opportunities (rates, industry practices, etc.)

Energy Conservation Opportunities

Summary of Energy Conservation Recommendations

Energy Conservation Opportunities	Estimated Annual Cost Savings (\$)	Estimated Capital Cost (\$)	Simple Payback (Years)	Estimated Xcel Energy Incentives (\$)*
1				
2				
3				
4				
5				

*Items marked with an asterisk are custom efficiency projects and may require pre-approval to qualify for an Xcel Energy rebate. Please check with your Xcel Energy representative before purchasing/implementing measure.

Facility and Operations Description

This 40,000 ft² building was designed as the main computer center and incorporates two computer floors with two stories worth of office tower above that. In recent times the use of personal computers and distributed processing has resulted in much of the computer space becoming available for other purposes. Currently the center has 10,000 ft² of computer floor, 10,000 ft² computer floor converted to office space, and approximately 20,000 of office space. There is also a tape storage area on the premises supplied with chilled water from the central plant. A desiccant dehumidification unit is used at the tape storage area.

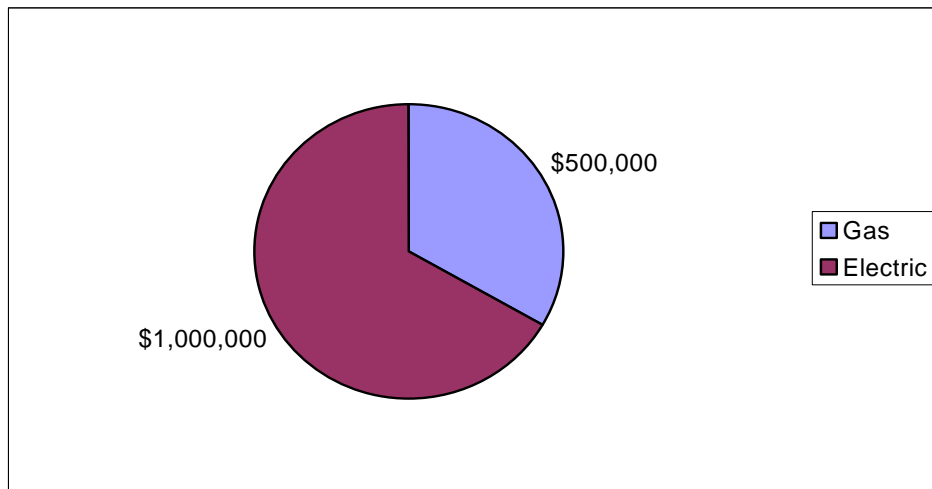
One major question is the schedule for remodeling of a number of the remaining floors. The building has had asbestos abatement in approximately half the space. These remodeled floors include a more open floor plan and increased occupant density. The schedule for the remainder of the building has not been determined, and the analysis presented here assumes a continuation of current conditions.

The utility rates used in the analysis are based upon 2005-2006 data and represent the approximate incremental expenses. At the Information Center the electric demand charge is based on the interruptible contracted rate and would not be immediately impacted by any energy conservation retrofit. Given the load factor of the facility, the blended energy rate used in the analysis is \$0.065 per kWh.

Energy Profile

The following charts identify your electric and natural gas use.

Total Annual Energy Expense

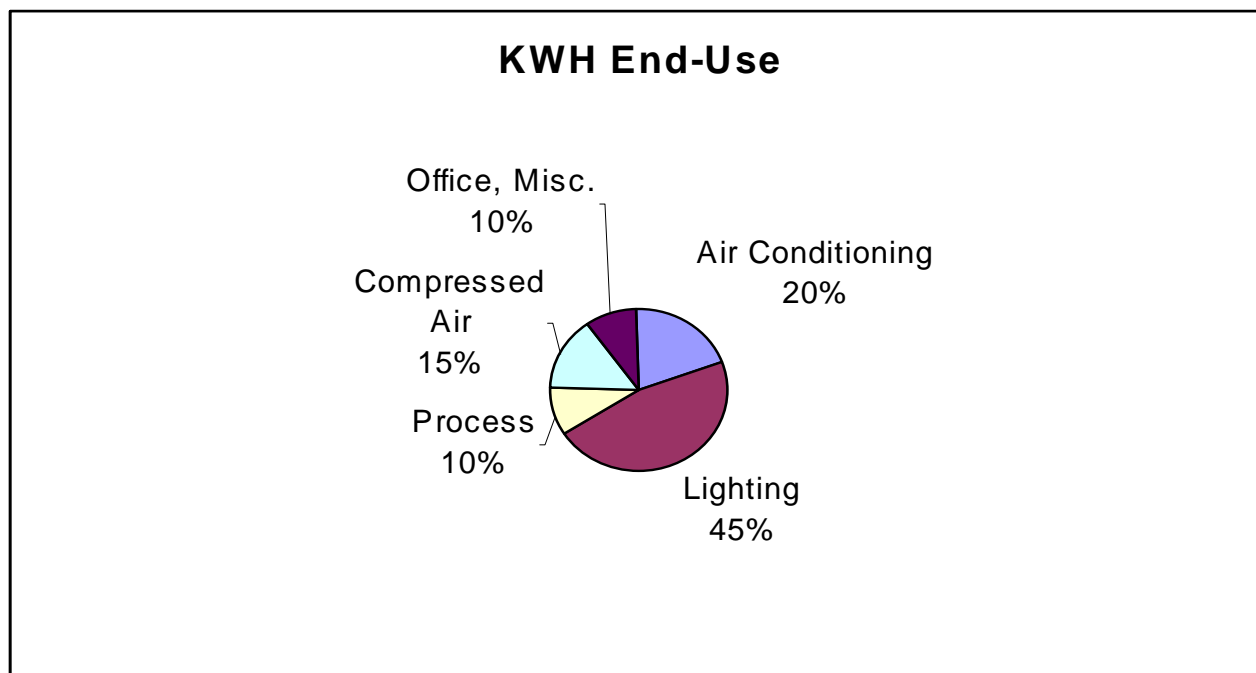


Annual Electric Consumption – Previous 12 months (definition of terms can be found in the glossary)

April 2005- March 2006

Month	Days	Actual Demand	Billed Demand	Energy	Total Cost	Cost/kWh	Load Factor
		KW	kW	kWh	\$	\$	
April							
May							
June							
July							
Aug							
Sept							
Oct							
Nov							
Dec							
Jan							
Feb							
Mar							
Total							
Avg.							

Electric Energy End Use Profile

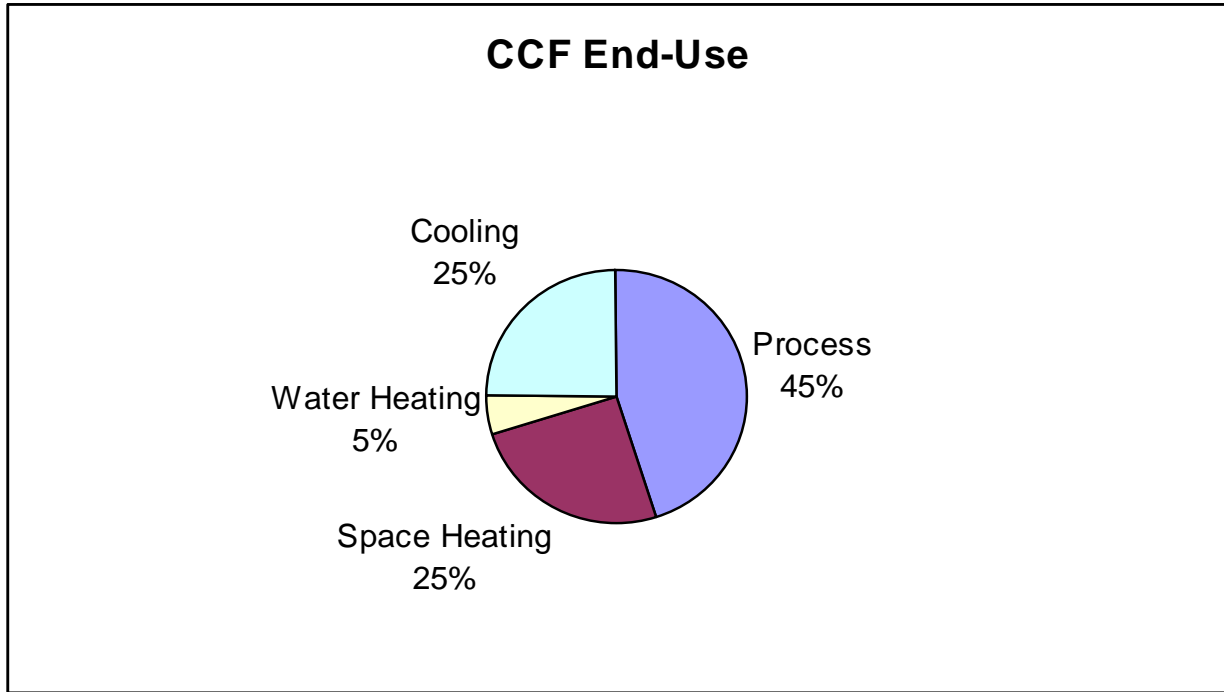


Annual Gas Consumption – Previous 12 months (definition of terms can be found in the glossary)

April 1999- March 2000

Month	Days	Total Energy	Total Cost	Cost/CCF	Degree Days (DD)	CCF/DD
		Therms	\$	\$		
April						
May						
June						
July						
Aug						
Sept						
Oct						
Nov						
Dec						
Jan						
Feb						
Mar						
Total						
Avg.						

Gas Energy End Use Profile



Energy Star Benchmarking Results

Facility Performance Set Energy Performance Baseline and Targets					
Select View: <input type="text" value="Facility Performance"/> Create View Edit View					
12 Months Ending		Actual Annual Energy Intensity (kBtu/Sq. Ft.)	Annual Energy Cost (US Dollars (\$))	Rating (1-100)	Target Rating
<input type="text" value="December"/>	<input type="text" value="2002"/>	84.0	\$0.00	41	75

Energy Conservation Opportunities

Summary of Recommendations

For detailed description, please refer to the Conservation Opportunity Analysis section following this table.

Energy Conservation Opportunity	Estimated Demand Savings (kW)	Estimated Energy Savings (kWh)	Estimated Thermal Savings (Therms)	Estimated Annual Cost Savings (\$)	Estimated Capital Cost (\$)	Simple Payback (Years)	Estimated Xcel Energy Incentives (\$)*
Payback less than 2 years (low/no cost opportunities)							
1							
2							
3							
4							
5							
Payback less than 2 years (capital cost opportunities)							
1							
2							
3							
4							
5							
Retrofit opportunities payback 2 – 10+ years							
1							
2							
3							
4							
5							
Discount Rate Opportunities							
1							
2							
3							
4							
5							

*Items marked with an asterisk are custom efficiency projects and may require pre-approval to qualify for an Xcel Energy rebate. Please check with your Xcel Energy representative before purchasing/implementing measure.

Conservation Opportunity Analysis

List, Describe, Prioritize conservation opportunities and show energy savings calculations; categorize based on end-use application (lighting, cooling, motors, controls) – Examples of information to be provided.

Task 1 – Lighting Upgrade

Lighting at the Information Center is a mixture of old and newer fixtures. Spaces tend to be over lit. Information attached to this report indicates a potential savings of 287 kW is possible with a lighting retrofit for a savings of \$48,088 per year in energy costs. This does not include any electric demand savings, maintenance savings, and savings from lower air-conditioning loads in the building. Still, at a first cost of \$439,400 it can not be recommended at this time. Contacting a lighting vendor or contractor to provide an estimate of equipment and installation retrofit costs, in addition to operating costs, would be the next step.

Task 2 – Chiller Operational Changes

Given the construction of the Information Center the building is internally load dominated. Still, given the conversion of much of the area to office space there should be a significant variation between day and night load. In reality the summer chiller load apparently only varies by approximately 125 tons (1,050 tons at 2 AM versus 1,175 tons at 6 PM on 8/11/00). Just turning out the lights at night should result in a significantly greater difference than this, much less skin loads at night and turning off air handlers outside of normal office hours in areas where continuous cooling is not required. Operational personnel should verify what loads are still required at night and where that capacity is going. During months of lower humidity experiments should also be made with raising the chilled water setpoint. The calculated savings are based on an assumed additional reduction of 370 kW for 10 hours per day.

Task 3 – Chiller Retirement

In addition to the above operational issues there is the question of overcapacity. There are three 28 year old chillers and two a little less than 20 years old. The newer machines were retrofit a few years ago with HCFC 123. The older machines are still running R11, a refrigerant no longer manufactured. Total refrigeration capacity is approximately 5,000 to 5,200 tons (not including a derate for the new refrigerant) although the cooling tower is set up for the original 3,000 tons. Only two machines are required at present and that situation should continue into the future. Given the overcapacity available one or two of the oldest R11 machines, which are less efficient than the newer equipment, should be retired in place. The maintenance savings are estimated at \$7,000 per machine per year and there is also the potential for the sale of the R-11 charge on the units at approximately \$5,000 per machine.

Task 4– Control System Rework

The control system at the Information Center consists of a marriage between two manufacturer's systems. The newer system is approximately 8-10 years old, having been installed with the asbestos removal remodels. Together they contain approximately 5,500 points of measurement or control. Maintenance is obviously a nightmare, and there appear to be some other problems such as the outside air temperature sensor location being in the sun. A building such as this could probably get by with approximately 500 points. Installing a new 500 point control system from scratch would likely cost \$480,000. Potentially this could be lowered somewhat if the existing newer system was modified, parts re-used, etc. rather than starting over. For this reason \$250,000 is used in the calculations. A new, smaller, control system would mean that operator training time and system maintenance costs could be substantially reduced from today's levels. One contractor's estimate for maintenance costs was found to be \$190,000 for today's system and \$20,000 for the 500 point one; a difference of \$170,000 per year.

Task 5 – Compressed Air Audit

The instrument air system provides control air to the building. While no detailed measurements were taken of the compressed air system, given the age and size of the system an audit is recommended. Contacting a compressed air service provider to provide an estimate for a Compressed Air Efficiency Study would be the next step.

Strategic Opportunity Analysis

List, Describe, Prioritize strategic opportunities; categorize based on strategy type (industrial best practices, OSHA, rate programs)

Task 6 – Improve Bill Payment Flow

Late charges on electric service billings over the last 12 months exceeded \$250. Xcel Energy requires payment within 16 days. The bill payment process should be streamlined to accommodate this time limit.

Task 7 – Sale of Two Emergency Generators

There are five 2.5 MW emergency diesel generators at the SIC. Given the current and future loads of around 5,000 kVA only two generators will be needed. Potentially two could be sold. Given the number of hours on them a major service will likely be needed in the near future, reducing the value of the machines to roughly \$200,000 each.

Task 8 – Decrease Emergency Generator Fuel Storage

There are currently ten 10,000 gallon underground diesel fuel storage tanks. At current load profiles this is enough to accommodate an outage of nine to ten days. This represents approximately \$33,000 in inventory, the cost for annual fuel testing and cleaning if found to be needed, and a potential legal liability for any leaks that might occur. The current supply appears excessive. While a closer examination may better reflect the precise amount of storage needed, for purposes of this report it appears that three tanks can be removed from service and retired. Emptying the tanks by burning the 30,000 gallons of diesel during normal generator testing will take over a year. At that point, given ground testing requirements, etc. it would be best to pull the retired tanks at a cost of roughly \$30,000.

Task 9 – UPS Systems

The uninterruptible power supplies at the SIC are already being studied by others due to the increased battery failure rate. Right-sizing of this equipment provides an opportunity to decrease energy use through the decrease in battery charging current requirements and the improved conversion capabilities of more modern equipment.

For More Information

In addition to the energy conservation measures we recommend in this energy assessment, Xcel Energy offers cash rebates and a variety of payment and billing programs to better manage your cash flow.

BillWise from Xcel EnergySM programs include payment options like

- Auto Pay – a simple and convenient way to have monthly energy payment automatically withdrawn from a bank account on the day it is due.

- EFT (Electronic Funds Transfer) – allows simplification of the bill paying process and improving cash management by directly transferring money from your account to Xcel Energy.
- Pay By Phone – allows quick and secure transfer of energy payment from a bank account directly to Xcel Energy, right over the phone, at no cost.
- Credit/Debit Cards Payments – allows payment of energy bill online or by phone using a credit or debit card for a small fee.

The Billing options include – EDI (Electronic Data Interchange) which allows receipt of your energy bill electronically the day after the billing cycle is complete. More information on all these programs can be obtained by discussing eligibility requirements with your Xcel Energy representative. You also can call the Business Solution Center at 1-800-481-4700 or visit us at xcelenergy.com for more information about qualifying for cash rebates, discount rates or billing/payment options..

Equipment Inventories

Attach as appropriate

Glossary

The following definitions will help you understand the information and how it relates to your energy bills.

Actual Demand is the highest average 15 minutes of demand over a billing period.

Billed Demand is the actual demand plus the adjusted demand for power factor correction.

CCF is 100 cubic feet of natural gas. For the purposes of measuring energy use, a therm and a CCF of natural gas are equivalent.

Load Factor is a measure of efficiency. Load factor is the ratio of average load in kilowatt supplied during a designated period to the peak load occurring that period.

$$\text{Load Factor} = \frac{\text{kWh supplied in a period}}{\text{Peak kW in a period} \times \text{Hours in a Period}}$$

Therm: A therm is a unit of energy equivalent to 100,000 BTU.