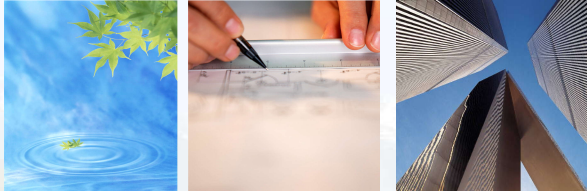


# Energy Design Assistance



Presented By: Jessie Peterson, Xcel Energy  
6-26-08



# Agenda

- ▀ Demand-Side Management Programs
- ▀ Energy Design Assistance Program
  - ▀ Program Overview
  - ▀ Case Study
  - ▀ How to Participate





## Demand-Side Management Programs

- Why?
  - Least Cost Plan
  - Environmental Benefits
  - Help customers manage their energy needs



## Demand-Side Management Programs

- Electric Conservation Goals

2009	2010	2020
150 GWh	220 GWh	422 GWh
- Natural Gas Goals in development
- Biennial Filing August 2008



## Goals

- ▶ Promote higher efficiency options
- ▶ Educate decision makers
- ▶ Educate sellers of equipment
- ▶ Rebate equipment to reduce first costs

Sustainable Design and Energy Efficiency work together!



## DSM Programs

- Compressed Air
- Custom Efficiency
- Energy Analysis for Business
- Energy Design Assistance
- Energy Management Systems
- HVAC
- Lighting
- Motors/ VFD's
- Recommissioning
- Saver's Switch®



## Energy Design Assistance Program Overview

- Program offering began in 2006
- 14 completed projects
  - 8 GWh savings (enough energy to power ~900 homes a year)
  - ~\$500,000 in incentives
- 78 projects in the pipeline to be completed between now and 2012
- 35% of current projects are LEED™ Registered.




## Energy Design Assistance Program Overview

- DSM – New construction incentives
- Whole building analysis
  - Utilizes energy modeling
  - Facilitated energy meetings
  - Incentives to lower the cost of high efficient opportunities
- FREE to Xcel Energy customers



## Energy Design Assistance Program Utility Perspective

What we do have...	What we do not have...
▶ State approval to administer	▶ Practicing architects
▶ Funding	▶ Practicing engineers
▶ Marketing Support	▶ Direct impact on customer choice
▶ Account manager/customer relationships	▶ Modeling expertise
	▶ Design experience



## Energy Design Assistance Program Customer Perspective

- ▶ Provides performance comparisons for different energy/design solutions
- ▶ Promotes lowering operating costs
- ▶ Maximize your options on impacting the environment
- ▶ Provides LEED®-NC AEC 1 baseline analysis as applicable




## Energy Design Assistance Program Program Requirements

- ▶ New construction, major renovation, additions
- ▶ 50,000 square feet +
- ▶ 150,000 square feet + for entirely residential applications
- ▶ Must start prior to design development



## Energy Design Assistance Program Incentives

- ▶ Free Energy Analysis and model ~ \$20,000+
- ▶ Design Team Reimbursement
  - ▶ Architect, engineer and cost estimator
  - ▶ Up to \$12,000
  - ▶ Based on project size
- ▶ Construction Incentives

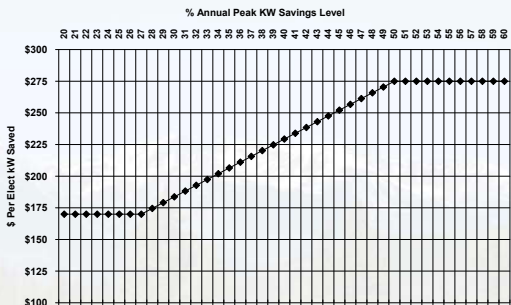


## Energy Design Assistance Program Incentives

- ▶ Increase with performance better than IECC 2003 energy code
- ▶ \$170/kW to \$275/kW

**\$ Incentive Rates for Energy Design Assistance Custom Consulting**

% Annual Peak KW Savings Level



% Annual Peak KW Savings Level	\$ Per Elect kW Saved
0	\$170
1	\$170
2	\$170
3	\$170
4	\$170
5	\$170
6	\$170
7	\$170
8	\$170
9	\$170
10	\$170
11	\$170
12	\$170
13	\$170
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23	\$175
24	\$180
25	\$185
26	\$190
27	\$195
28	\$200
29	\$205
30	\$210
31	\$215
32	\$220
33	\$225
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86	\$275
87	\$275
88	\$275



## Energy Design Assistance Program Collaborative Design

- ▶ The Design Team
  - ▶ Strategy definitions
  - ▶ Incremental costs
- ▶ The Owner
  - ▶ Agree to implement strategies
- ▶ Xcel Energy
  - ▶ Strategy definition and modeling
  - ▶ Consultant fees
  - ▶ Incentive payment






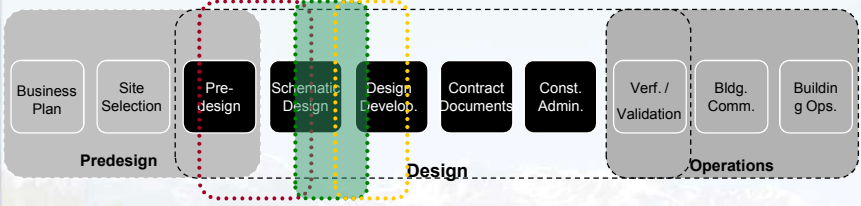
## Energy Design Assistance Program Process

▀ **Five Step Process**

1. Introductory meeting
2. Preliminary analysis meeting
3. Bundle analysis
4. Final analysis and CD Review
5. Site Verification

## Energy Design Assistance Program Timing



**Step 1:**  
**Introduction Meeting**

- Owner
- Owner's design team
- Xcel Energy's Design Assistance Consultant
- Xcel Energy

Introduce program, discuss building characteristics, and select strategies to be used in creating the energy model.

**Step 2:**  
**Preliminary Analysis Meeting**

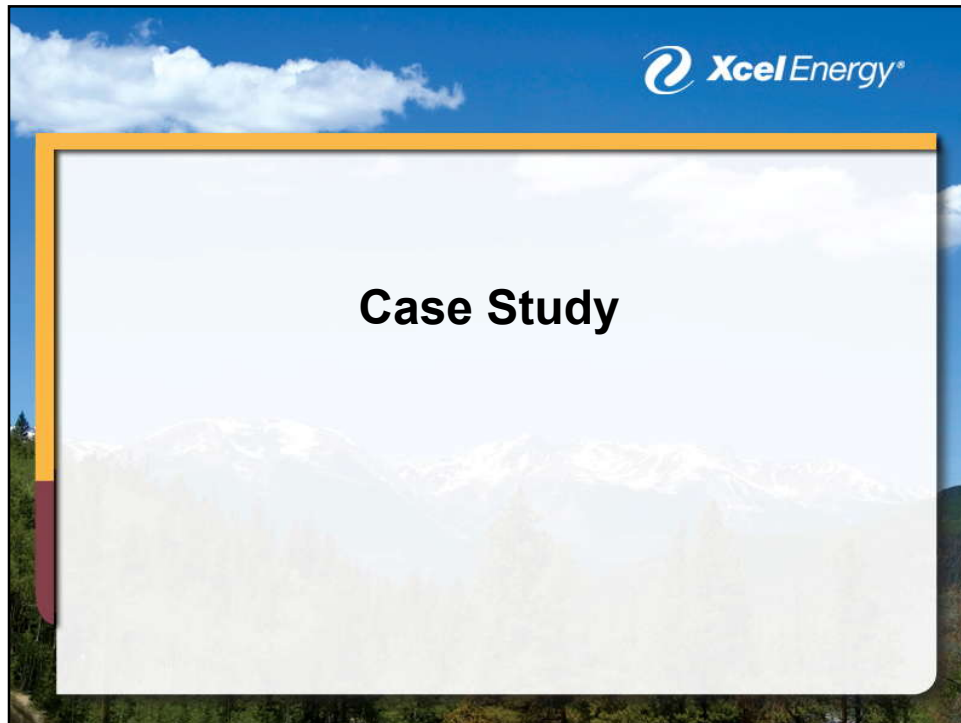
Review results of the energy model that shows how strategies can work together to create a better performing building.

**Step 3:**  
**Final Analysis Meeting**

Review results of all modeled strategies including:

- First costs
- Energy savings
- Payback
- Xcel Energy incentives

With help from design team, owner selects strategies to include in final plans.



Xcel Energy®

**Signature Center at Denver West**  
**Aardex Corporation**

- ▀ Golden, CO
- ▀ New Construction
- ▀ 185,906 Square Feet
- ▀ \$46 Million
- ▀ EDA design 2006
- ▀ Occupancy 2007/2008

A slide with a blue header containing the Xcel Energy logo. Below the header is a large white rectangular area with a thin orange border. The title "Signature Center at Denver West" and "Aardex Corporation" are in bold. Below the title is a bulleted list of project details. To the right of the list is a photograph of the building, a modern multi-story structure with a curved roofline. The background of the slide is a scenic view of snow-capped mountains under a blue sky with white clouds.




## Signature Center at Denver West Energy Savings

Energy Design Assistance

- Phase 1: Verification
  - 260 kW savings
  - 598,034 kWh savings
  - \$65,520 in incentives






## Signature Center at Denver West Energy Savings

LEED™ Certification

- LEED CS- Platinum
  - 37.3% energy reduction
  - 32.8% energy reduction
  - 7 out of 10 EA:1 points





## **Signature Center at Denver West Energy Measures**

- ▀ Under floor ventilation achieved by high-efficiency Roof Top Units equipped with an outside air economizer
- ▀ Building perimeter conditioned with chilled beams and radiant heaters
- ▀ Hot water supplied from high-efficiency boilers
- ▀ Chilled water supplied from evaporative cooled condensing chilled water units on roof with variable volume pumping distribution
- ▀ Lighting controlled by occupancy sensors, dimmable switches, and photo sensors



## **Energy Design Assistance Program In Summary**

- ▀ New Construction/Major Renovations
- ▀ 50,000 square feet
- ▀ Energy modeling: Lighting, Mechanical, Envelope Strategies
- ▀ Incentives based on energy savings



**Energy Design Assistance Program**  
**How to Apply**

- ▶ [www.xcelenergy.com/EDACO](http://www.xcelenergy.com/EDACO)
- ▶ Application
- ▶ Contact
  - ▶ Account Manager
  - ▶ Business Solutions Center
  - ▶ Jessie Peterson, Xcel Energy
    - ▶ 612-330-6850