

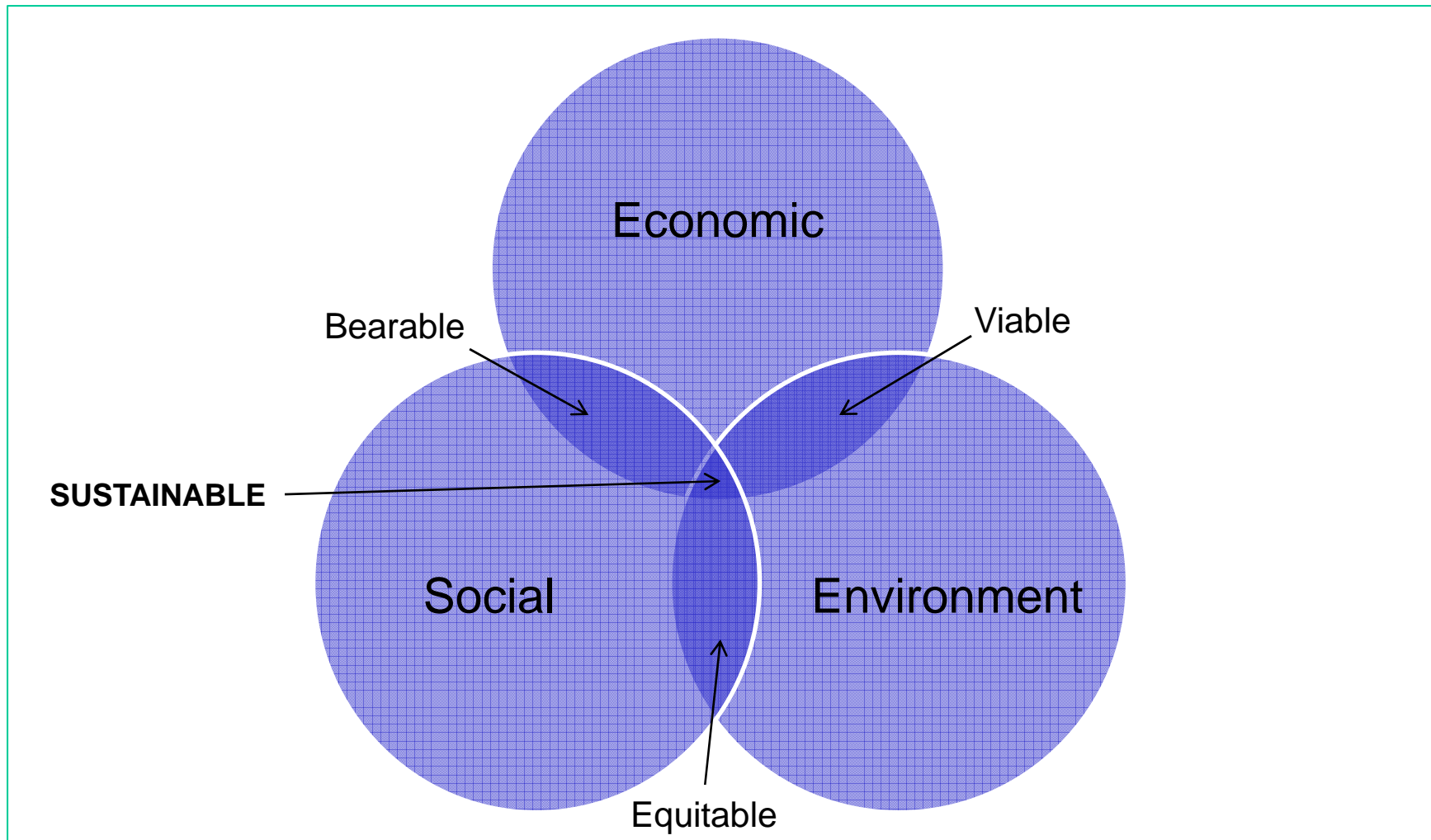


**17<sup>th</sup> Annual Spring Education Seminar  
Minnesota Health Care Engineers Association**

# **Sustainability Strategies for Health Care**

**Kevin Bengtson  
Key Account Manager  
Business Conservation Programs**

# What is Sustainability?



## **Items covered in this session:**

- **Xcel Energy sustainability strategies**
- **Why should your business care?**
- **Strategies and programs for businesses to reduce their energy-use and carbon footprint**

## About Xcel Energy...

- **Xcel Energy is a gas and electric utility.**
- **Headquarters in Minneapolis, we have four operating companies that do business in 8 states.**
- **We serve 3.3 million electric customers and 1.8 million natural gas customers.**

# What is Xcel Energy's Strategy?

- In MN, we plan to reduce our carbon dioxide emissions by 22% by the year 2020.

## *How?....*

- Increase conservation efforts!
- Add more wind and other renewable technologies to our resource portfolio!
- Environmental upgrades to existing power plants!

## Why are We Pursuing this Strategy?

- **As a gas and electric utility we have an impact on the environment. We work hard to reduce that impact.**
- **Environmental leadership is good business. A proactive approach helps us manage risk and reduce costs over the long run.**
- **Environmental investments can be attractive— with the potential for favorable cost recovery and earnings growth.**

# Why Should Your Business Care?

- **You have an impact on the environment**
  - **1.176 lbs CO<sub>2</sub> / KWH \*\***
  - **11.64 lbs CO<sub>2</sub> / Therm \*\***
  - **\*\* Regional emissions data for Xcel Energy**

# Why Should Your Business Care?

- **Environmental leadership is good business**
  - Energy costs are increasing.
  - Threat of carbon legislation could affect profit!
  - Your customers want you to be green!

# Energy Costs are Increasing!

- **Fuel costs are increasing!**
  - **Natural gas: 20% of power in U.S. 300% increase since 1999.**
  - **Oil: Recent record price levels.**
  - **Coal: 50% of power in the U.S. 20% increase in last 3 years.**
  - **Uranium: 19% of power in U.S. 40% increase since 2001.**

# Energy Costs are Increasing!

- **Infrastructure costs are increasing!**
  - New power plants needed to meet growth.
  - EIA projects a need for 50,000 MW by 2014.
  - Increased transmission investment.
  - Demand for higher quality power (distribution).
  - Storm damage.

# Your Customers want Green!

- **Wal-mart: discount retailer**
  - **Goal to transform into a 100% renewable energy and zero net waste company.**

## *Working to...*

- **Establish public goals and timetables**
- **Establish buy-in at every level in company**
- **Transparent reporting**

## Establish a Benchmark

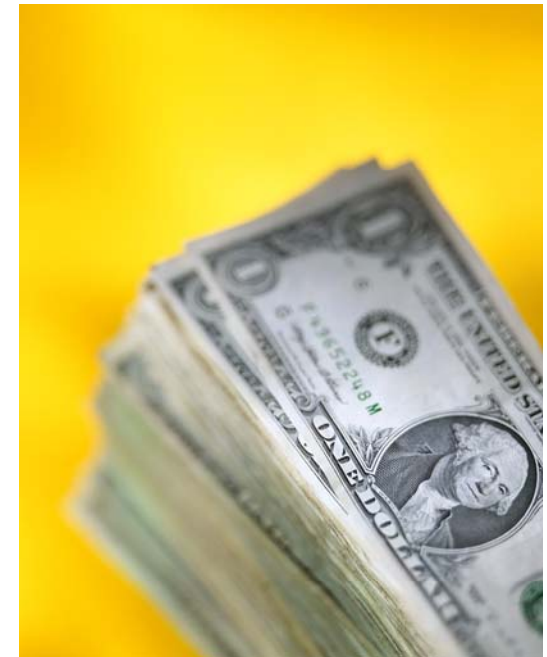
- **Track consumption as well as your costs.**
- **Microsoft Excel is your friend.**
  - **Dates of Service, Days in Billing Cycle, KW, KWH**
  - **Square Footage, Total Cost, Average Temp, Equip Change**
- **Calculate KWH / Square Foot**
- **Use your EMS system, or inquire about interval data for your facility**

# Strategies and Programs

- **Programs are available throughout MN**
- **Studies**
  - Energy Analysis, Recommissioning, many others
- **Prescriptive / fixed rebates**
  - For commonly used energy-efficient equipment
  - Lighting, cooling, motors, and more
- **Custom rebates**
  - Custom Efficiency Program, Energy Management Systems, Energy Design Assistance

# Energy Analysis

- **On-site assessment**
  - How do you use energy?
  - How could you save?
  - Project priorities
  - Estimates savings and rebates
- **Online energy assessment**
  - Free at [xcelenergy.com](http://xcelenergy.com)
  - Good starting point
  - 20-30 minutes



# Lighting Efficiency

- **Typically the #1 end-use for businesses**
- **One-Stop Lighting program**
  - Free assessment of existing lighting system
  - Assistance in choosing the right high-efficiency lighting
- **Retrofit rebates**
  - Existing facilities and new construction
  - Help offset the cost of replacing current lighting with more efficient equipment with rebates

# Cooling Efficiency

- Typically the #2 end-use for businesses
- 20% efficiency gain over units that are just 15 years old!
- Common projects
  - Water-cooled chillers
  - Rooftop units and split systems
  - Oversized Cooling Towers
  - VAV boxes



# Heating Efficiency

- **Typically the #3 end-use for business**
- **Space and water heating; humidification; sterilization**
- **Common projects**
  - **Boiler tuneups**
  - **New energy-efficient boilers and furnaces**
  - **Steam trap repair and replacement**
  - **Auxiliary equipment: Stack dampers, burner turndown**

# Motor Efficiency: NEMA Premium® Efficient Motors

Description	Horsepower	Rebate
New motor (new equipment or burnout)*	1 to 200	Based on hp
Replacing operating motor*	1 to 200	Based on hp
Custom motor	Over 200 (per motor)	Individually determined (Custom Efficiency)

\* Additional requirements apply



# Motor Efficiency

## Variable Frequency Drives (VFDs)

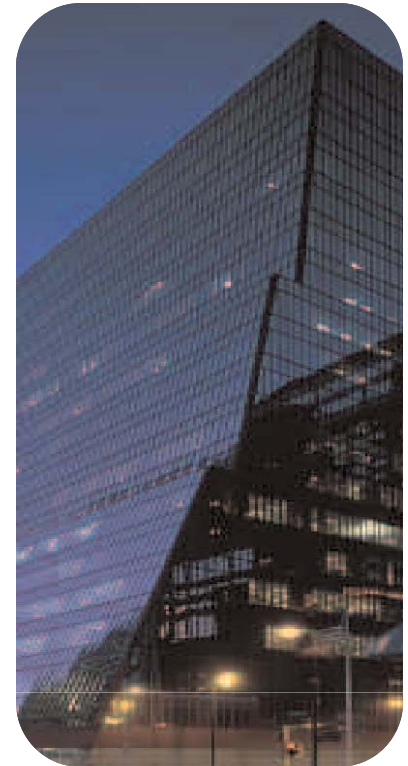
- **Systems running for long-periods of time**
- **High degree of throttling**
- **Pumps, fans, blowers**

Description	Horsepower	Rebate
VFDs*	1 to 200	Based on hp
Custom VFDs	Over 200 (each)	Individually determined (Custom Efficiency)

\* Additional requirements apply

# Recommissioning

- **Tune-up existing building systems**
- **Improve performance**
- **Studies**
  - 75% study funding, max \$25,000
  - Preapproval
- **Implementation rebates**
  - Up to 60% of project costs
  - \$400 per kW
  - \$5 per MCF



# Recommissioning

- **Systems**

- Central heating/cooling
- Air handling units
- Rooftop AC units
- Pumping
- Outside air
- Central chilled water loop

- **Controls**

- Sequence of operations
- Resets
- Start/stop times
- Air flow issues

## What's your savings potential?

**Call 1-800-481-4700**

- **Business Solutions Center**
- **Xcel Energy account manager**
- **Determine program eligibility, savings potential**
- **Xcelenergy.com**