Brief Background: Gundersen Lutheran

- **Gundersen Lutheran**
  - Mission: We distinguish ourselves through excellence in patient care, education, research, and improved health in the communities we serve
  - GL Health System
    - Service area: 19 counties in 3 states (WI, MN, IA)
    - Clinic founded in 1892 and hospital in 1902
    - Currently have 41 clinic facilities
    - 325 bed tertiary care hospital
    - Integrated delivery system
      - About 700 providers and nearly 7,000 employees
    - Residency and medical education programs
    - Multiple Top 100 Hospital and Service Line recognition
Brief Background: Myself

- Corey Zarecki
  - 15 years in industry
    * 8 years in HVAC (Trane) and 7 years in the chemical industry
      - Various roles in engineering, process improvement, customer satisfaction, and leadership
    - Last 2 years at Gundersen Lutheran
      * Healthcare process improvement opportunities
        - Reduce cost/waste
        - Improve efficiency and quality
      * Energy
• **Envision**: Gundersen Lutheran’s vision for energy and environmental stewardship
  
  – Energy management
    • Energy efficiency
      – Already achieved 20% reduction in 18 months
      – Targeting another 10% reduction in 2010
    • Renewable energy
      – Offset the remaining energy consumption with renewable energy by 2014
        » Path identified
        » Some projects complete, others in various phases
  
  – Waste management and control
  – Recycling
  – Sustainable design of new facilities
Why should a Healthcare System Think about Energy/Environment?

- Pollutants from the burning of fossil fuels cause cancer, liver disease, kidney disease, and reproductive issues.
- According to DOE, hospitals are 2.5 times more energy intensive than other commercial buildings\(^1\)
  - This is inconsistent with our mission … we are responsible for contributing to disease through our wasteful consumption.
- Energy costs continue to escalate, making it more difficult to provide affordable care.
- Reducing waste results in an improved bottom line.
- Typically 1–2% of operating expense.

\(^1\)http://www.energy.gov/news2009/7363.htm
Escalating Energy Costs

- Rising energy prices and the increasing energy intensity of hospitals have produced escalating energy costs.
- 91% of hospitals reported higher energy costs over the previous year, and over 50% cited increases in double-digit percentages.¹

Hospital Energy Alliance

- Industry-led partnership of more than 30 leading hospital systems and healthcare organizations across the United States
  - Launched April 2009
- Goal — reduce energy consumption and greenhouse gas emissions while lowering operating costs and enhancing healthcare delivery
- Vehicle for evaluating, testing, and ultimately implementing replicable approaches to achieving energy-efficient hospital buildings, systems, and equipment
- Helping hospitals harness/validate advanced technologies, provide a unified voice to affect the supply chain, and shape future R&D
## Hospital Energy Alliance Members

### Hospitals/Healthcare Facilities
- Ascension Health
- Boulder Community Hospital
- Catholic Health Initiatives
- Catholic Healthcare West *
- Cleveland Clinic *
- Dartmouth-Hitchcock Medical Center
- Geisinger Health System
- Gundersen Lutheran Health System *
- Hackensack University Medical Center
- Health Care REIT
- HealthSouth
- Hospital Corporation of America *
- Inova Health System
- Johns Hopkins Health System
- Kaiser Permanente *

### Associations
- ASHE *
- ASHRAE *
- IES *
- IFMA
- Practice Greenhealth *
- VHA

* Steering Committee Member
Assumptions:
- Includes properties that are owned and/or managed
- HEA numbers do not include outpatient facilities or medical office buildings
HEA: Key Barriers

• Personnel (especially smaller and rural hospitals)
  – Not a lot of engineers or technical people
  – Limited training on energy efficiency
  – Need to maintain the comfort

• Buildings
  – Checkerboard construction/disconnected systems
    • Brand new buildings connected to 100+-year-old buildings
      – Equipment and controls that span as well
      – Need controls to talk
  – IAQ
  – Waste Heat Recovery
  – Combined Heat and Power
HEA: Key Barriers

- **Business case**
  - Energy competes with other mission-critical investments
  - Little to no documented results for value on some technologies
  - Communicating payback to decision-makers
    - Personnel don’t know what to ask the suppliers
    - Personnel don’t know how to sell to leadership
    - Personnel don’t sit in the same meetings
  - Nonprofits cannot use tax incentives

- **Energy efficiency practices**
  - Not widely shared in healthcare industry
  - Many codes/regulations
  - Less established energy-efficient technology specific to healthcare — ENERGYSTAR® or ENERGYSTAR-like ratings
HEA Subcommittees

- Develop technical tools, resources, and strategies for different hospital building systems
  - Medical Equipment and Plug Loads
  - HVAC
  - Benchmarking and Measurement
  - Lighting
  - Power Alternatives

Focus of Activities

Quick Wins (<12 months): Short-term projects utilizing off-the-shelf products and low-cost adjustments with quick paybacks

Innovation (12–24 months): Mid-term projects focused on systems-based approaches and other projects with more moderate payback periods

Game Changers (>24 months): Long-term projects that address the way hospitals are designed and operated, with a focus on products in the R&D pipeline
Through working groups, the subcommittees will develop tools and resources specific to their technology systems

**Quick Wins**

- Database of shared best practices for energy-efficient design and operation
- Business case materials to market to hospital executives
- Better benchmarking/goals for building systems
- Guidance for working with utilities to negotiate improved rate structures

**Innovation**

- Improve legal and regulatory strategies for implementing new technologies
- Impact the R&D supply chain for the development of more energy-efficient hospital-specific technologies

**Game Changers**

- Rethink the design and operation of hospitals to develop net-zero energy buildings
- Improved energy standards, codes, and regulation for hospitals
- Improved technology procurement for hospitals, cross-coordinated with other alliances
Advanced Energy Design Guides for small and large hospitals will provide design strategies and case studies to support the sector in aggressively managing energy use/costs.

DOE partnered with American Society for Healthcare Engineering (ASHE), ASHRAE, the U.S. Green Building Council, and the AIA to develop an AEDG for Small Hospitals and Healthcare Facilities (up to 90,000 ft²), released in October 2009.

Now, DOE is developing a design tool focused on large hospital design.
Our Opportunity/Our Challenge

• Energy efficiency and renewables in the healthcare building sector
  – Tight margins elevate the importance of all controllable costs in healthcare
  – Green emphasis
  – Hospital influence/leadership in our communities
  – Energy and environmental stewardship can lower the cost of healthcare; both issues are high priorities of new administration

• Genuine partnerships with suppliers are critical to make this happen

The time is NOW!