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Commercial Building Energy Alliances

Supplier Summit

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Chicago, IL



Brief Background: Myself and Gundersen Lutheran

- Jerry Arndt
 - 34 years in HVAC industry – various roles in Engineering, Management, and Senior Leadership roles with Trane
 - Last 4 years in healthcare as Sr. VP of Business Services at Gundersen Lutheran
 - Heard the call for opportunities to help strengthen quality, improve efficiency, reduce waste, and lower costs in healthcare

Brief Background: Myself and 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

Gundersen Lutheran Envision Program

- **Envision:** Gundersen Lutheran's vision for energy and environmental stewardship
 - Energy efficiency
 - Retrocommissioning underway to reduce energy by 20% over 2 years
 - Renewable energy
 - Road to 100% renewables by 2014 has been mapped
 - Waste management and control
 - Recycling

The Healthcare Energy Situation

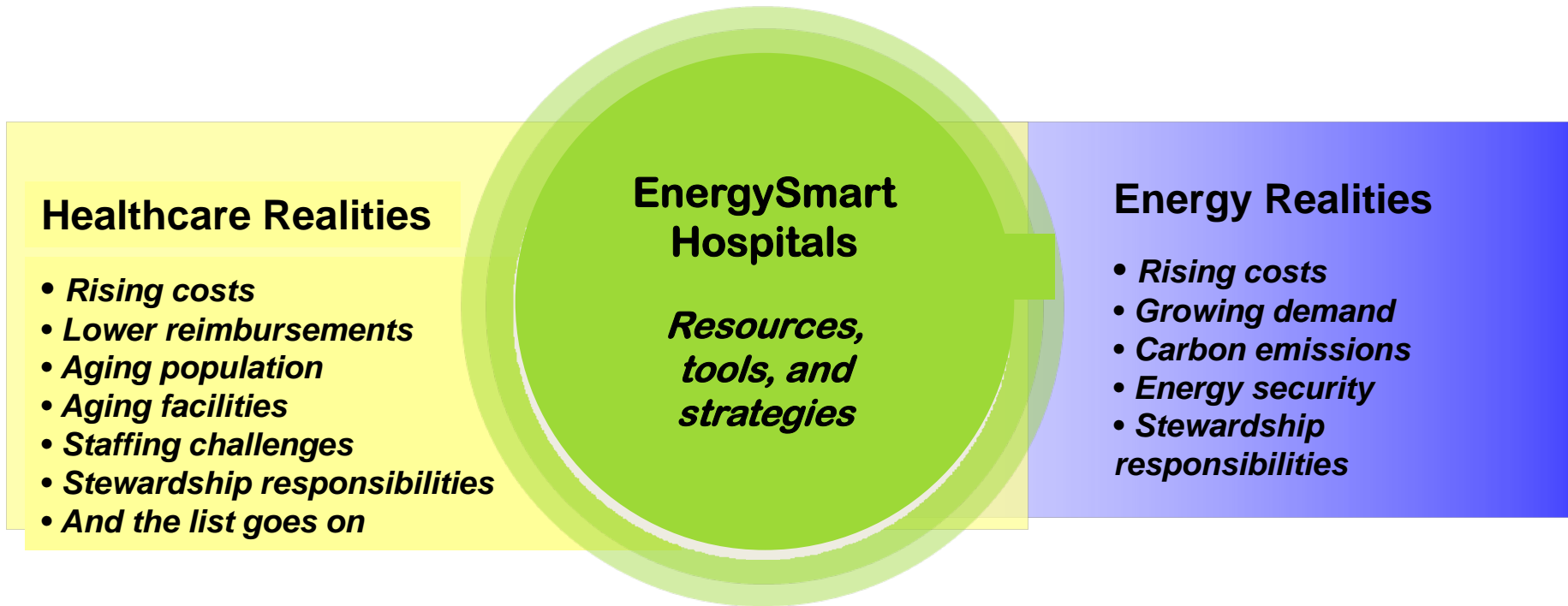
- Commercial buildings use 72% of U.S. electricity and 55% of U.S. natural gas
- Healthcare energy consumption is disproportionately high amongst commercial buildings
- Healthcare energy consumption from DOE's 2003 Commercial Buildings Energy Consumption
 - 594 trillion BTUs
 - \$7.44 billion annual cost
 - Next CBECS will be for 2007; to be published mid-2009
- More recent estimates
 - 836 trillion BTUs annual for hospitals
 - > \$10 billion annual cost

The Healthcare Energy Situation

- Hospitals have >2.5 x energy intensity and CO₂ emissions of commercial office buildings
 - Hospitals produce > 30 pounds of CO₂ per square foot
 - Hospital energy spending typically 1-2% of operating expense
 - Below C-Suite radar screen in many organizations
- BUT**
- Recently gaining attention because of cost escalation and other reasons



Convergence of Challenges



- Goal: Promote 20% improved efficiency in existing buildings and 30% in new construction over current standards

Key Barriers Identified by HEA Steering Committee

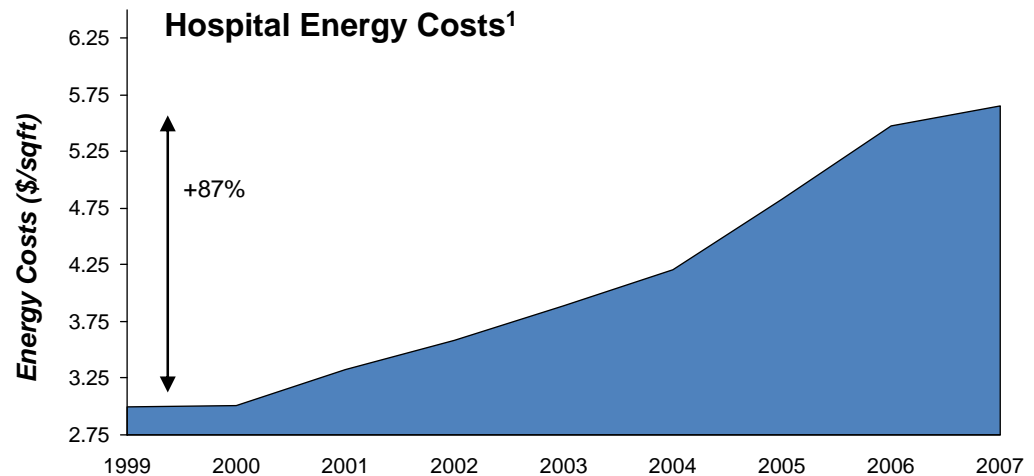
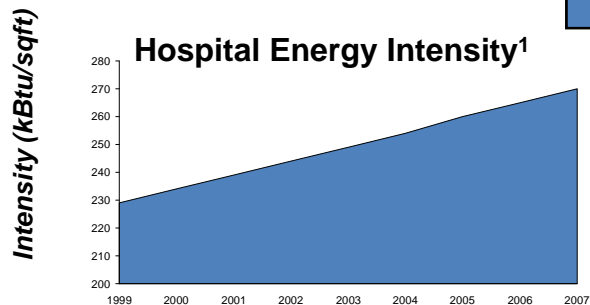
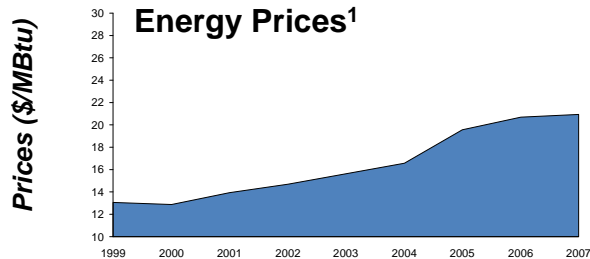


- Energy competes for capital dollars with other mission critical investments in the healthcare industry
- Little-to-no documented results exist to demonstrate the value of investing in energy efficiency for certain technologies
- Properly financing energy efficient and renewable energy projects is challenging for hospitals
- Best efficiency practices and data are not widely shared in the healthcare industry
- Communicating an effective business case to key hospital decision makers is difficult
- Energy efficiency changes face many legal and regulatory hurdles
- Hospital operators and designers receive limited training and goal guidance on energy efficiency
- Smaller and rural hospitals face significant financial and human capital barriers to efficiency improvement
- Less established energy efficient technology specific to the healthcare sector, due to limited “collective voice” of the healthcare industry.



Escalating Energy Costs

- Rising energy prices and the increasing energy intensity of hospitals have produced escalating energy costs¹
- 91% of hospitals reported higher energy costs over the previous year, and over 50% cited increases in double-digit percentages²



¹EIA, Commercial Building Energy Consumption Survey (CBECS)

²ASHE survey, *Health Facilities Management Magazine*, June 2006



Energy Efficiency in Hospitals: Achieving Mission-Critical Goals

Mission Area

Potential Energy Contribution

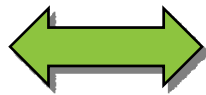
Patient



Staff



Environment



**Fiscal
Responsibility**



- Improved indoor environment and comfort, enhancing patient health and recovery
- Healthier workplaces for higher employee retention
- Increased productivity and decreased medical errors
- State-of-the-art, efficient operational equipment such as updated HVAC technology
- Reliable backup power from clean sources (onsite generation, combined heat and power, renewables)
- Reduced impact of hospital operations on public and environmental health issues linked to power plant emissions
- ROI on new equipment and systems – less expensive operation and maintenance
- Each dollar a nonprofit hospital saves on energy – equivalent to generating new revenues of \$20¹

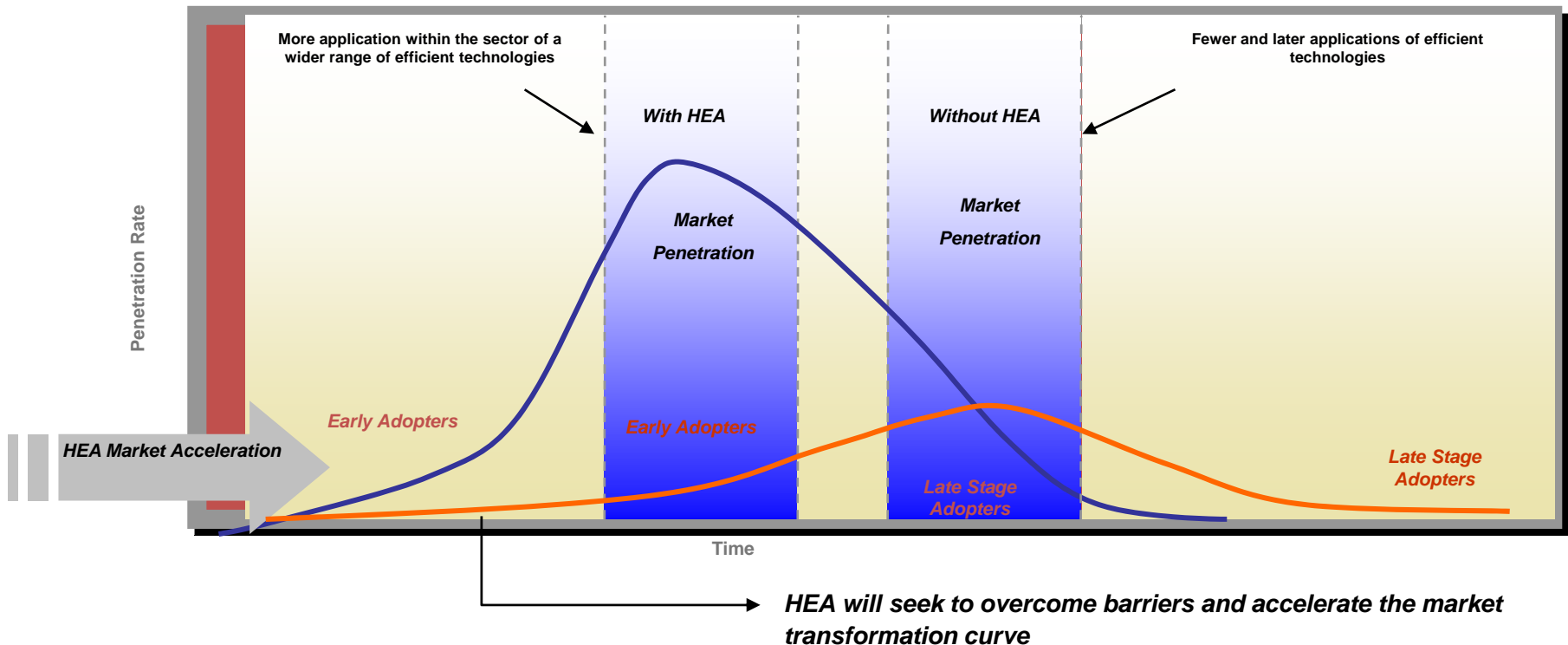
¹EPA, as cited from ASHE article 1/2003

Hospital Energy Alliance



Critical Core of EnergySmart Hospitals

Hospital Energy Alliance: Potential Market Penetration



Questions Put to HEA Members

- What are your greatest challenges right now in operating your current facility and in implementing improvements?
 - HVAC
 - Refrigeration
 - Controls
- What is your vision for the future – what changes would help you move forward greater energy efficiency? What practical measures would you like to be able to implement that cannot be accomplished due to limitations with equipment, technology, and/or services?
 - HVAC
 - Refrigeration
 - Controls

Questions Put to HEA Members

- What help do you need from suppliers to assist you in making a strong business case for pursuing energy efficiency improvements or renewable energy sources?
- What are some code or regulatory issues affecting hospitals that you view as “over the top” – things that make it technically difficult or cost prohibitive for vendors to offer equipment, technology, and/or services to improve energy efficiency?

We received some responses, but we don't know what we don't know. From your perspective as suppliers, how would you answer these questions?

Sampling of Responses to Questions

- Checkerboard construction/disconnected systems make it difficult to implement “system” improvements
- Interoperability/Open Protocols vs. proprietary control systems
- Smart Controls
- Equipment designed for “hospital applications” – standard high efficiency w/o cost prohibitive option prices
- ENERGY STAR[®] or ENERGY STAR-like ratings on equipment

Sampling of Responses to Questions

- Certifiable energy performance-rated equipment
- System flexibility and portability supportive of frequently changing building space usage
- Expandability of systems
- Training and Maintenance – Serviceability
- IAQ
- Hospital building regulations/codes
- Waste Heat Recovery
- Combined Heat and Power
- Value Engineering Process
- Performance Contracts

Our Opportunity/Our Challenge

- The time seems right for a full-court press on energy efficiency and renewable energy 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.

Let's Just Do It!