

energy⁺
to care *Greater efficiency
supports patient care.*

**How can your health care facility
benefit from Energy to Care?**



American Society for Healthcare Engineering

A personal membership group of the
American Hospital Association

© 2017 American Society for Healthcare Engineering,
a personal membership group of the American Hospital Association
155 N. Wacker Drive, Suite 400 | Chicago, IL 60606
ashe.org | ashe@aha.org | 312-422-3800



Kara Brooks, LEED AP BD+C

Sustainability Program Manager,
ASHE

kbrooks@aha.org

Office: 312-422-3813

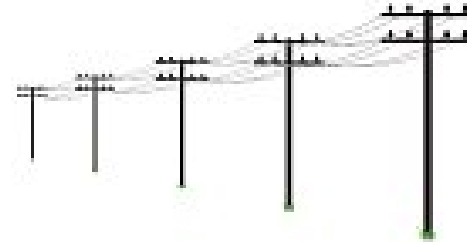
Agenda

- Background
- Healthcare Quiz
- Energy to Care and Sustainability Roadmap
- Getting Started
- Case Studies
- Awards and Recognition
- Energy and Water Survey

Background

Energy Use Intensity

- Energy Use Intensity (EUI) is a metric that is often used in comparing energy use in buildings. EUI is simply energy demand per unit of area of the building's floorplan. It allows you to compare the energy demand of buildings that are different sizes.



Energy Use in Healthcare

“The energy use intensity (EUI) for hospitals is approximately 250 kBtu/ft², ranking just behind the food service sector, and outpatient healthcare facilities use about 95 kBtu/ft². The EUI of hospitals and other inpatient healthcare facilities is nearly three times that of typical commercial buildings; and U.S. healthcare facilities spend \$8.8 billion/year on energy (Benz and Rygielski 2011). On a per-building basis, hospitals use an average of 600,000 MMBtu, far outpacing any other building type.”

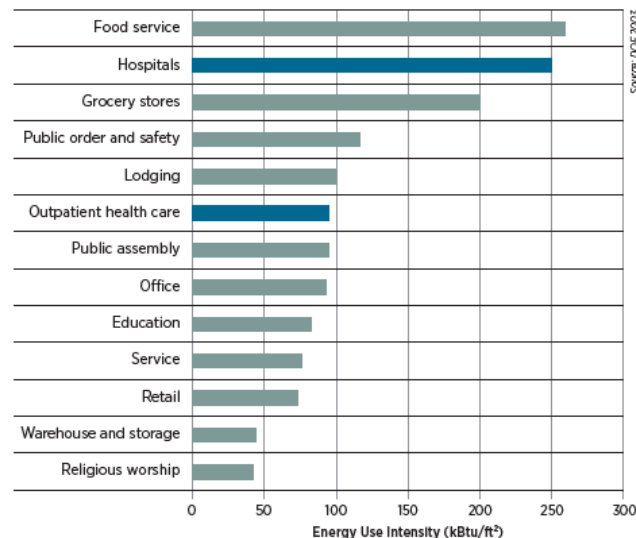


Figure 1-1 EUI for common commercial building types

* From US DOE, “Advanced Energy Retrofit Guide: Healthcare Facilities

Energy Use in Healthcare

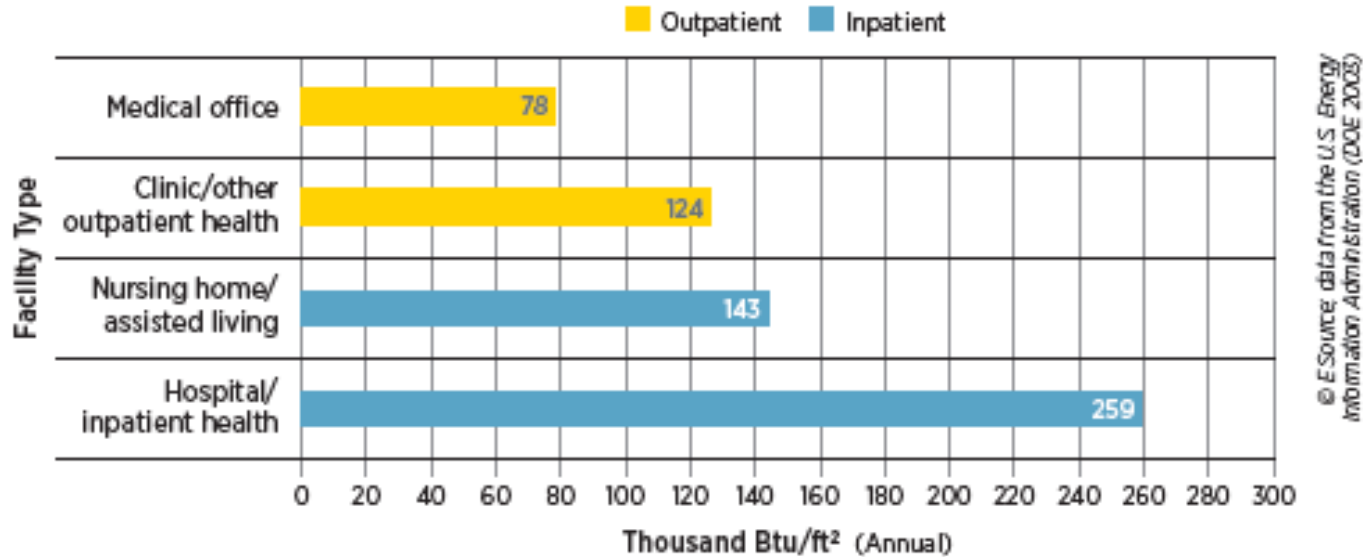


Figure 2-3 EUI of different healthcare facility types

Health Care and Energy Quiz

Health Care and Energy Quiz

1. Energy Costs are typically ____% of a health care facility department's budget.

energy to care⁺



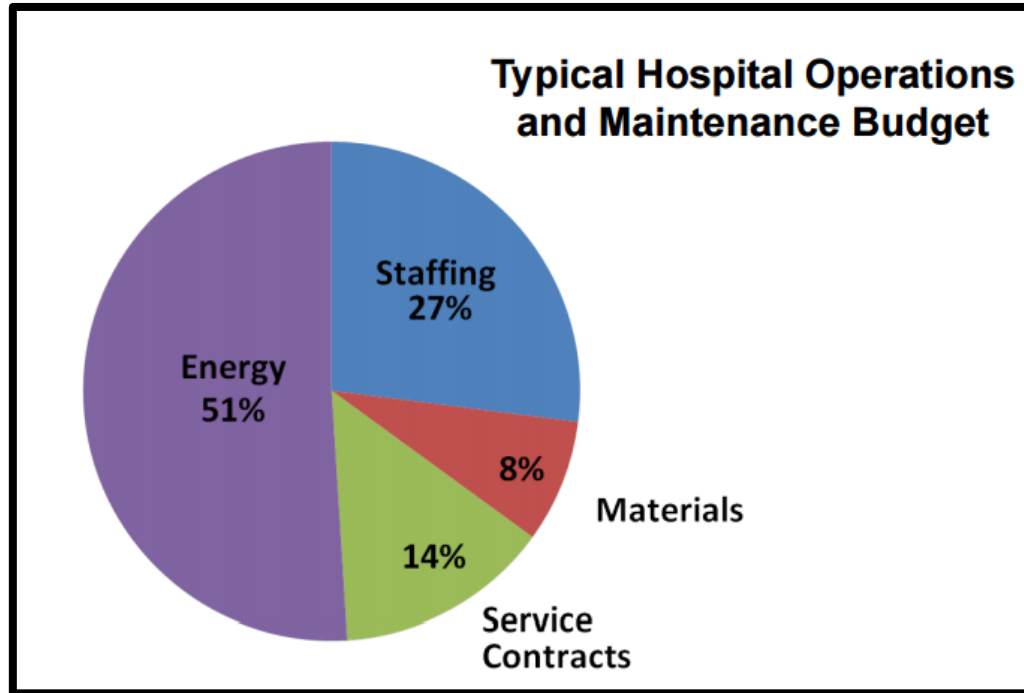
Health Care and Energy Quiz

1. Energy Costs are typically 51% of a health care facility department's budget.

energy to care⁺



Hospital O & M Budget



Health Care and Energy Quiz

2. The energy cost inflation rate is currently at ____% while U.S. inflation is at ____%.

energy to care+



Health Care and Energy Quiz

2. The energy cost inflation rate is currently at 3% while U.S. inflation is at 1%.

energy to care⁺



Health Care and Energy Quiz

3. One dollar of energy savings is worth about \$___ in revenue.

energy to care⁺



3. One dollar of energy savings is worth about \$20 in revenue.

- At a 5% Operating Margin for every \$1 in gross revenue
 - \$0.95 is required to cover the expense of providing services
 - \$0.05 is left to fund other expenses



Health Care and Energy Quiz

- Impact of the Operating Margin

Operating Margin	For Each Revenue Dollar To Cover Exp/Avail \$'s	Amount of Revenue to Generate \$1
7%	\$0.93 / \$0.07	\$15
5%	\$0.95 / \$0.05	\$20
2%	\$0.98 / \$0.02	\$50

The smaller the operating margin,
the greater value of each dollar saved!

Operating Margins Decline

“At the 501 standalone hospitals in S&P's group, the average operating margin in 2013 was 2.1%, a decrease from 2.6% the prior year and 2.7% in 2011.”

From Modern Healthcare, “Hospitals, Systems see Operating Margins Shrink as Expenses Climb”, By Beth Kutscher, August 13, 2014



energy to care⁺



Energy to Care & Sustainability Roadmap for Hospitals

Energy to Care & Sustainability Roadmap for Hospitals

- ASHE is working very hard to help members set and achieve sustainability goals. To meet this objective, ASHE created trusted sustainability resources that are specifically tailored for health care facilities.
- Two ways chapters can reach sustainability goals are by becoming involved in ASHE's **Energy to Care** program and becoming an ally of the **Sustainability Roadmap for Hospitals**.



Process – How do I get started?

Key Steps – Getting Started

- Benchmark
- Conduct an Energy Review
- Create and Energy Management Plan
- Implement Energy Management Plan
- Measure Project Results



BENCHMARKING

Current Participation

- Who is participating?



EPA Energy Star

- Similar to appliances in your home, the EPA provides an Energy Star rating system for buildings.
 - Energy Star uses rating system of 1 to 100 to benchmark buildings against their peers
 - Energy Star Certified with score of 75



ENERGY STAR is a U.S. Environmental Protection Agency voluntary program that helps businesses and individuals save money and protect our climate through superior energy efficiency.

What Will I Need to Start?

Before signing in to Energy Star's Portfolio Manager or Energy to Care for the first time, you need to gather some basic information about your properties.

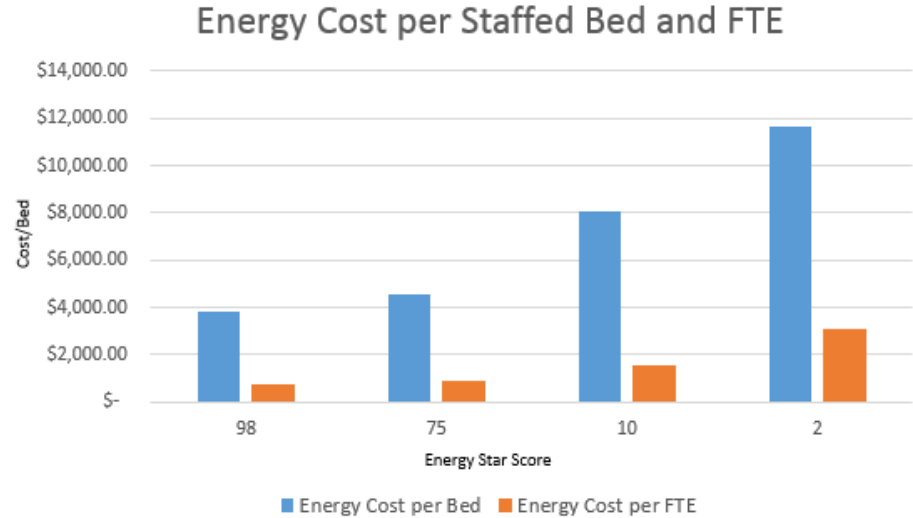


1. Gross floor area
2. Year of construction
3. Percentage of building that is occupied
4. Parking lot sizes (open, partially enclosed, and completely enclosed)
5. 12 months or more of utility bills (natural gas and electricity) and fuel oil usage for unusual events such as natural gas curtailments and electric utility outages
6. Number of total meters (natural gas and electricity) including inactive meters



Another Way to Look at the Impact of Energy Savings

- **Energy Star Score = 2**
 - Energy Cost Per Bed = \$11,700
 - Energy Cost per FTE = \$3,000
- **Energy Star Score = 10**
 - Energy Cost Per Bed = \$8,050
 - Energy Cost per FTE = \$1,550



*Based on Median Data from Energy Star's Portfolio Manager guide, "Energy Use in Hospitals"

energy to care+

ASHE's Goals for Energy to Care:

1. Provide value for large health systems but also for small rural hospitals
2. Useful to a facilities engineer but also to C-suite
3. Build a business case to fund energy efficiency projects
4. Easy to implement, inexpensive, and simple to maintain

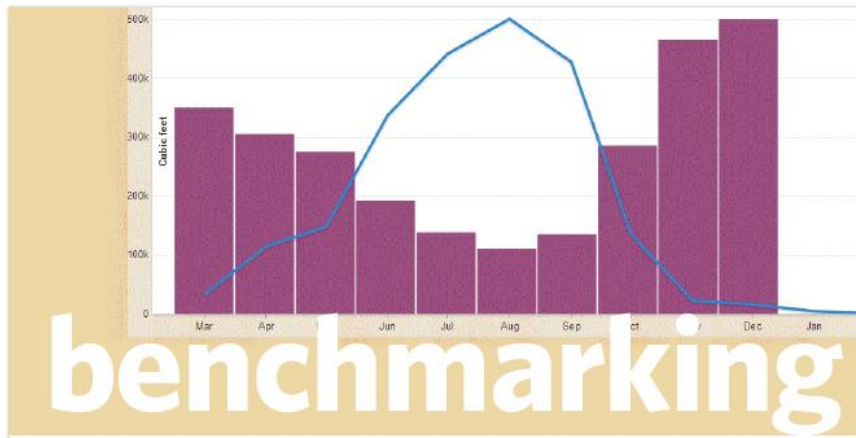


energy to care⁺



Energy to Care Program

- Energy to Care empowers hospitals to put resources back into patient care.



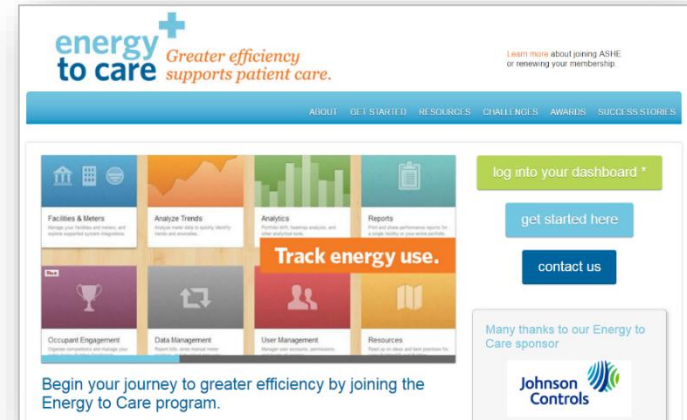
energy to care+

What is Energy to Care?

- Energy to Care is a complimentary program to help health care facilities **monitor**, **reduce**, and **communicate** energy consumption.
 - Awards and Success Stories (Recognition)
 - Energy dashboard and system challenges (Tools)

Energy data remains confidential!

energytocare.com



energy to care+

is sponsored by:

lucid

**Johnson
Controls**

Energy to Care Toolkit



Download the new Energy to Care toolkit at **energytocare.com** for:

- Tools
- FAQs
- Video tutorials
- And more!

Energy to Care Toolkit

The intent of this toolkit is to provide additional resources that will help you reduce energy consumption and get the most value out of the Energy to Care program.

- 1 ENERGY TO CARE TOOLS AND RESOURCES**
Get answers to frequently asked questions about Energy to Care.
[\[click here \]](#)
- 2 VIDEO TUTORIALS FOR THE ENERGY TO CARE DASHBOARD BY LUCID**
Learn how to use your dashboard to track performance, share results with stakeholders, and support energy efficiency projects.
[\[click here \]](#)
- 3 PERFORMANCE IMPROVEMENT MEASURES (PIMS)**
Implement effective no-cost and low-cost projects to help your facility reduce energy consumption.
[\[click here \]](#)



Special thanks to the Energy to Care Program Supporters:



How Do I Participate in Energy to Care?

4 steps to take advantage of the benefits of Energy to Care:

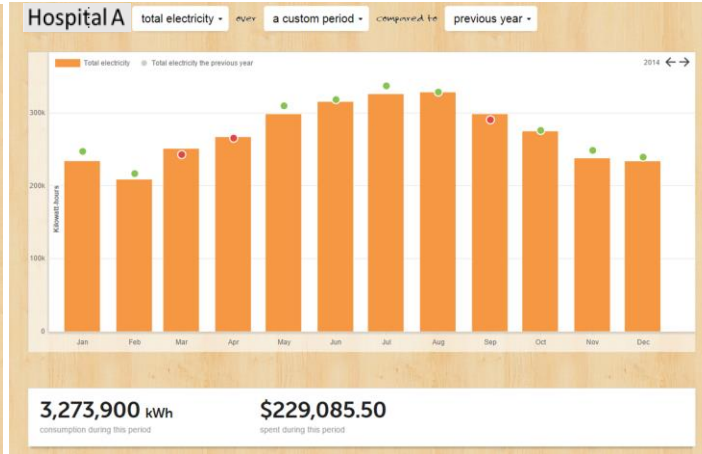
1. Benchmark your data in Portfolio Manager®. | [How-to](#) | [Video](#) |
2. Connect your Portfolio Manager account with ASHE and share your data | [How-to](#) | [Video](#) |
3. Connect your Portfolio Manager account with Lucid's BuildingOS and share your data | [How-to](#) |
4. Email Energy Star Username to Helpdesk when sharing step is complete | [Helpdesk](#) |



www.energytocare.com/start/



Tools: Dashboard



energy to care+

ENERGY TO CARE - CONFIDENTIALITY

Data confidentiality appears to be a common concern among hospitals considering whether to participate in Energy to Care or not.

Data will not be distributed or shared with any other entity without the express written consent of the participating healthcare system.

Energy to Care's "Data Use" policy clarifying the confidentiality of the program can be found on the Energy to Care website on the bottom right hand side under "Featured Resources."



ENERGY REVIEW

Energy Review

- Energy Audit
 - Examines how energy is used in the building
 - Different levels of audits –Capital Improvements
 - ASHRAE Level 1 – simple audit, can be done in-house
 - ASHRAE Level 2 – Targeted Audit, typically performed by energy consultant
 - ASHRAE Level 3 – Investment grade audit
- Retro-Commissioning Study – Low Cost/No Cost Improvements



What is the Sustainability Roadmap for Hospitals?

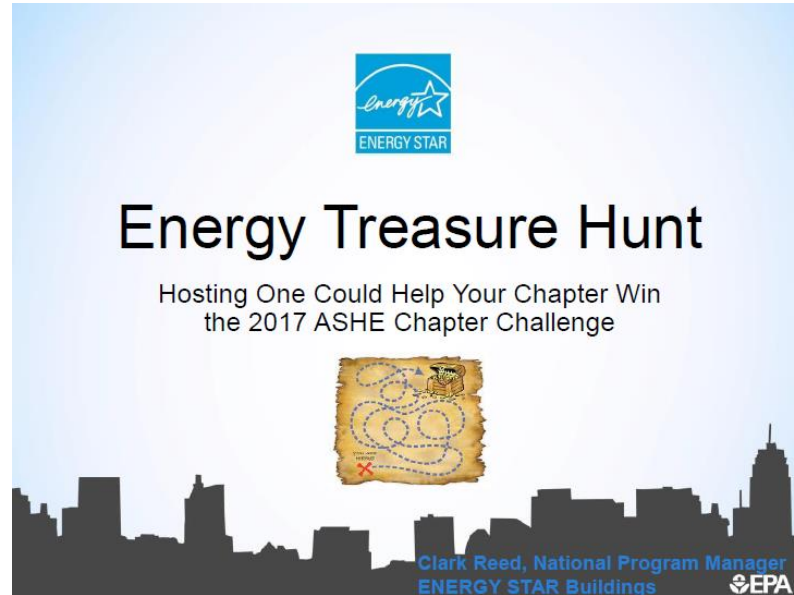


The Sustainability Roadmap for Hospitals is an online resource for hospital-specific information and how-to project guides.

sustainabilityroadmap.org



Energy Treasure Hunt



energy to care+



ENERGY MANAGEMENT PLAN

Create an Energy Management Plan



Energy Management Plan and Analysis

Team	Concept	kWH	MMBTU U	kWH \$	MMBTU \$	Total Annual Savings \$	Implementat ion Cost	Payba ck	CO2 Reduction
Clinical TEAM	Equip operating rooms with controls and hardware to automatically slow down the air handler (or reduce constant air volume (CAV) box flow) after normal procedure hours. Do not change the temperatures; simply reduce the air flow to the room while still maintaining the code-mandated positive pressure relationship to the surrounding corridors.	269,040	0	\$ 18,832	\$ -	\$ 18,832	\$ 3,000	0.16	168
	Balance operating room total air changes per hour (ACH) to achieve between 20 to 25 ACH (code minimum is 20 ACH).	42,679		\$ 29,087		\$ 29,087	\$ 2,100	0.07	168
Non-Clinical TEAM	Lab Equipment Turned ON 24/7	21,498	0	\$ 1,500	\$ -	\$ 1,500	\$ 1,300	0.87	17
	Equip lighting systems in lobbies, skywalks, back-of-house locations, rest rooms, lounges, and other common areas with high-quality motion sensors and ambient lighting sensors that automatically dim or shut off the lights based on daylight and traffic conditions.	31,003		\$ 2,170		\$ 2,170	\$ 3,800	1.75	

IMPLEMENTATION

Implementation

- Prioritize Performance Improvement Measures for successful implementation



MEASURE RESULTS



Why Should I Participate?

Reduce BTUs, not FTEs.

energy to care⁺



Supporting Patient Care

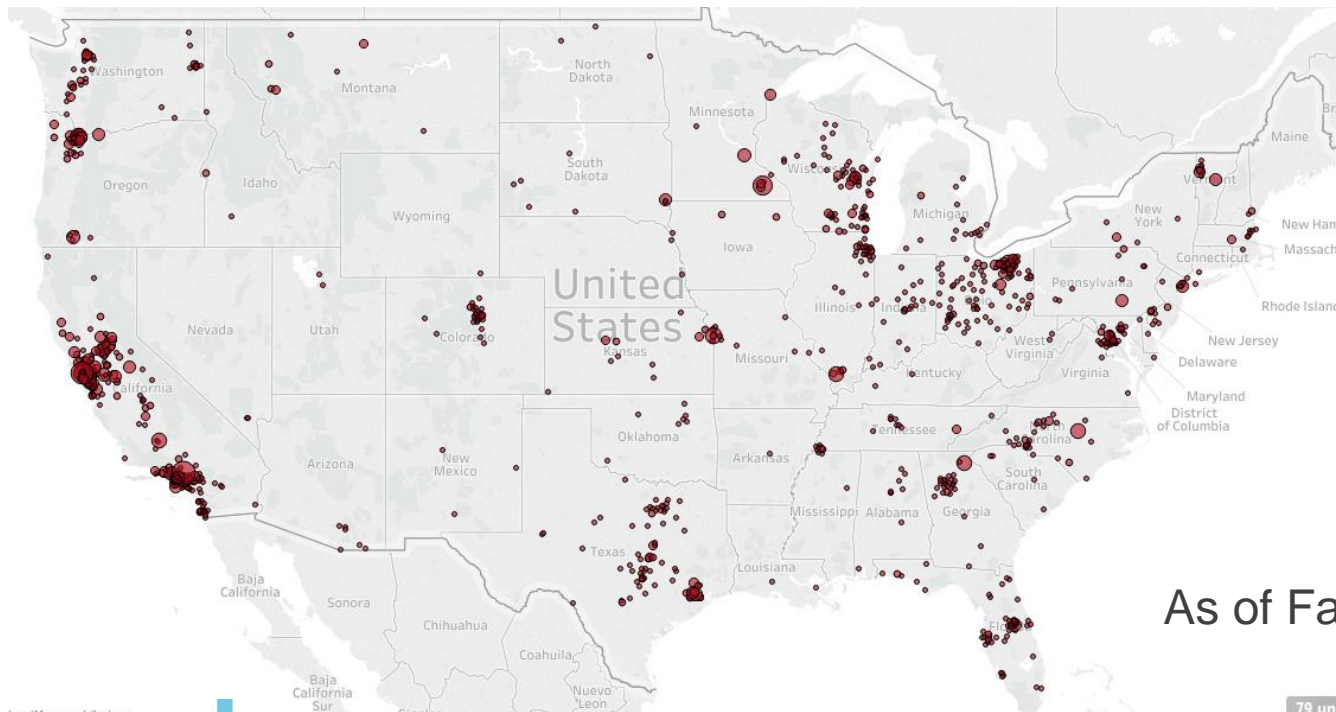
Since 2010, hospitals and health care facilities participating in ASHE's Energy to Care program have put **more than \$127 million dollars in energy savings back into patient care.**



energy 
to care *Greater efficiency
supports patient care.*



Geographic Distribution



As of Fall 2016

energy to care+

Awards & Recognition

Energy to Care Awards Program

The **Energy to Care Awards** honor health care facilities that reduce energy consumption by 10% in a single year or by 15% over two years. The program also recognizes previous award winners that reduce energy consumption by 5%.



Be Recognized for Your Efforts!

Energy to Care Award winners are recognized each year at the ASHE Annual Conference. ASHE also sends a letter of congratulations and provides two plaques: one for the facility team member(s) and one for the hospital CEO (or other selected leader).



2017 Chapter Challenge Award

2016 - 232 Facilities, 12 Chapters Participated

- Large Category Winner:
 - *California Society for Healthcare Engineering*
- Small Category Winner:
 - *Kansas Healthcare Engineers' Association*



2017 – 18 Chapters Participating!

2016 Elite Chapters

Arizona Society for Healthcare Engineering, Inc.
Arkansas Association for Healthcare Engineering, Inc.
California Society for Healthcare Engineering, Inc.
Georgia Society for Healthcare Engineers
Healthcare Engineers Society of Northern Illinois
Healthcare Facilities Managers Association of Delaware Valley
Kansas City Area Healthcare Engineers
Kansas Healthcare Engineers' Association
Kentucky Society of Healthcare Engineers
Missouri Society for Healthcare Engineering
North Carolina Healthcare Engineers Association, Inc.
Northern Ohio Society for Healthcare Engineering
Oklahoma Association of Healthcare Engineers
Pennsylvania Society for Health Facility Management
Texas Association of Healthcare Facilities Management
The New England Healthcare Engineers' Society, Inc.



Chapter Elite Award Requirements (2017)

- ASHE Energy to Care Chapter Challenge Program
 - Two Categories
 - Small (5-15 Hospitals Participating)
 - Large (16 or more Hospitals Participating)
- Select a Sustainability Liaison
- Board vote to become Ally of Sustainability Roadmap
- Submit application to become an Ally of the Sustainability Roadmap



Case Studies

Energy to Care Success Stories

energy to care  *Greater efficiency supports patient care.*



Energy and Water Survey

Energy and Water Survey

- ASHE is asking all health care facilities to complete its Energy and Water Survey, which will help update ENERGY STAR scoring models in addition to identifying energy and water use trends. The data will be anonymously shared with the U.S. Environmental Protection Agency with the goals of:
 - Updating the ENERGY STAR 1-100 score models for both General Medical & Surgical Hospitals and Medical Office Buildings
 - Expanding to new ENERGY STAR 1-100 score models for other health care space types
 - Evaluating the potential to develop a 1-100 score for water efficiency

energy to care+



Energy and Water Survey

- Streamlining Survey Completion
 - Benchmark Facilities in Energy Star
 - Connect Survey to Energy Star Data
- Goal – December 31, 2017 completion
 - 370 Inpatient (Hospitals) – currently have 71% complete
 - 370 (out-patient) – 44% complete



energy to care+



energy⁺
to care *Greater efficiency
supports patient care.*

QUESTIONS?



American Society for Healthcare Engineering

A personal membership group of the
American Hospital Association

© 2017 American Society for Healthcare Engineering,
a personal membership group of the American Hospital Association
155 N. Wacker Drive, Suite 400 | Chicago, IL 60606
ashe.org | ashe@aha.org | 312-422-3800