

A Nonprofit Approach to Developing a Corporate-Level Facility Energy Management Program

Presenters: Skip Smith
 Andy Woommavovah

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“A Nonprofit Approach to Developing a Corporate-Level Facility Energy Management Program”

Today's presenters...

George “Skip” Smith, SASHE, CHFM

National Vice President Physical Asset Services
Member, HealthTrust’s ESN (Environmental
Sustainability Network)



Andy Woommavovah

National Director, Facilities and Construction



Setting the Stage

- Healthcare is constantly reacting to changes in how patient care is delivered both locally and nationally
- A reaction to change can be even more pronounced in nonprofit healthcare organizations
- In the nonprofit arena one must be as efficient as possible in providing facility support services
- Truly understanding how facilities operate and consume energy is key

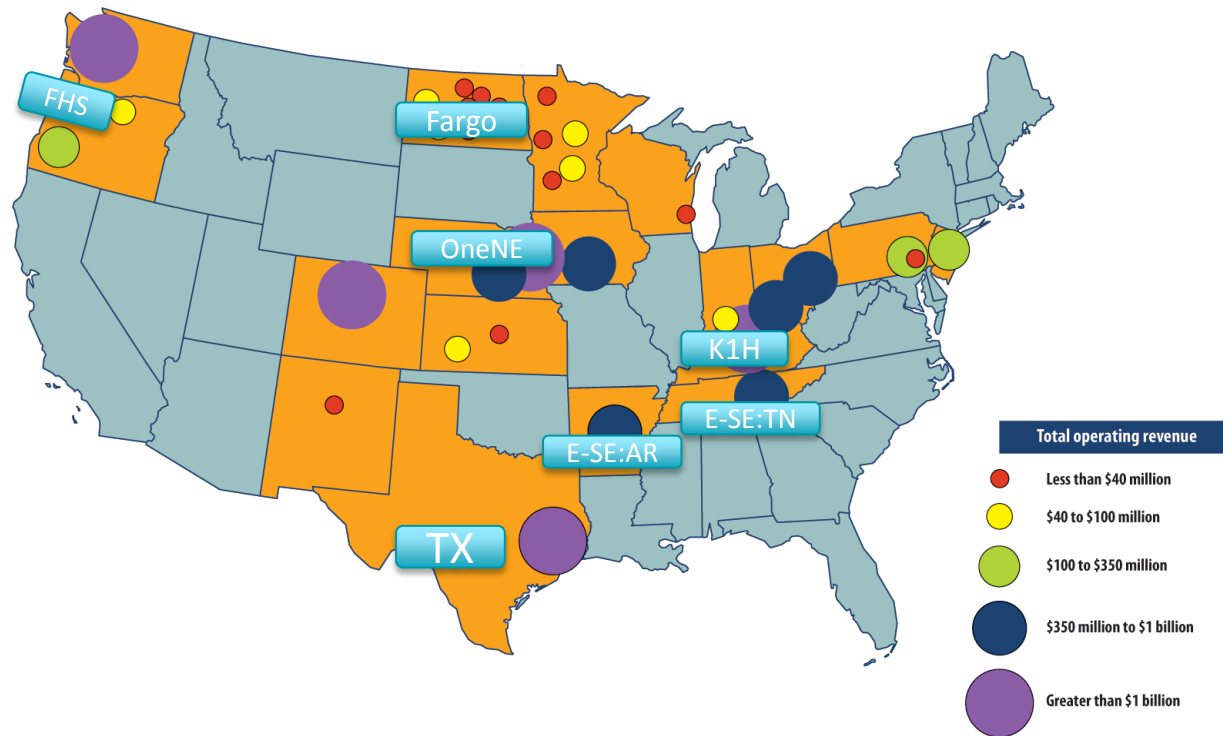
Catholic Health Initiatives (CHI)

About CHI

- Nonprofit, faith-based health system
- Formed in 1996 by 12 congregations of women religious
- Nation's third-largest nonprofit health system
- Based in Englewood, Colorado; operates in 19 states
 - 104 hospitals, including four academic health centers and major teaching hospitals
 - 30 critical-access facilities, community health-services organizations, accredited nursing colleges, home-health agencies and living communities
- FY2015: CHI provided almost \$970M in financial assistance and community benefit for programs and services for the poor, free clinics, education and research
- Financial assistance and community benefit total more than \$1.6B
- FY2015, generated operating revenues of \$15.2B
- Total assets of approx. \$23B

Catholic Health Initiatives – CHI

Facilities Management Enterprise Program



TOTAL OPERATING REVENUE BY MARKET

A Nonprofit Approach

CHI's Approach – Early Challenges

Unique Challenges

**Local Market Leadership
(CEO, CFO, COO)**

Local FM Leadership

**Locally Established
Relationships**

**This issue has become more prevalent with
the focus on leveraging GPOs**

Leadership Feedback

- Why a national program?
- Why can't we do this on our own?
- Are you using my budget?

Develop Talking Points

- I did not have to do this before?
- I am accustomed to doing my own thing.





- **Develop Talking Points**
- **Create incentives**
- **Create competition**

- I have been using this vendor forever!
- I am helping my community

- **Be prepared for this**
- **Explain system benefits**
- **Explain incentives**

CHI's Approach – Early Challenges

Example – Talking Points

Opportunity	Savings	Foundation
Facilities Management		
Utility Management	<p>Implementing national energy standards can drive down energy costs by 3% - 8%</p> 	<ul style="list-style-type: none"> • Best practices in energy management • Leveraging GPO's energy contracts and adding site to CHI Portfolio • Leveraging national, custom, contracts specific to CHI • Standard demand management protocols and retrofitting of existing equipment
National Benchmarking <ul style="list-style-type: none"> • Energy cost reduction • Management awareness of building performance 	<p>Identifies opportunities and quantifies utility cost reduction</p> 	<ul style="list-style-type: none"> • Capturis facilitates energy benchmarking • Management analysis of building performance & mitigation planning for energy use • Real-time energy management projected for FY17
National Custom Contracts	<p>3% - 10% negotiated savings on MRO with CHI's National Custom Contracts</p> 	<ul style="list-style-type: none"> • GPO negotiated custom MRO agreements specific to CHI
Utility Bill Pay & Facility Data Awareness	<p>Reduce the cost per invoice</p> 	<ul style="list-style-type: none"> • Capturis to pay all utility bills and capture facility energy data in database

CHI's Approach – Early Challenges

Unique Challenges

“Silo Effect”



Leadership Feedback

- Direct message required.
- Total buy-in is critical.
- Must transition from: *“If you have seen one CHI hospital you have seen one CHI hospital”* to *“If you have seen one CHI hospital you have seen a good representation of the enterprise.”*

Success Factors

- Create synergies
- Create economies of scale
- Create replicate-able process
- Leverage volume services

Understand What You Have

*“Before we can plan it,
we need to know what
we have.”*

– Facility Director

Understanding the Basics of the Facilities

**Conduct inventories to extract the base information for benchmarking:
Be prepared to segregate by size**

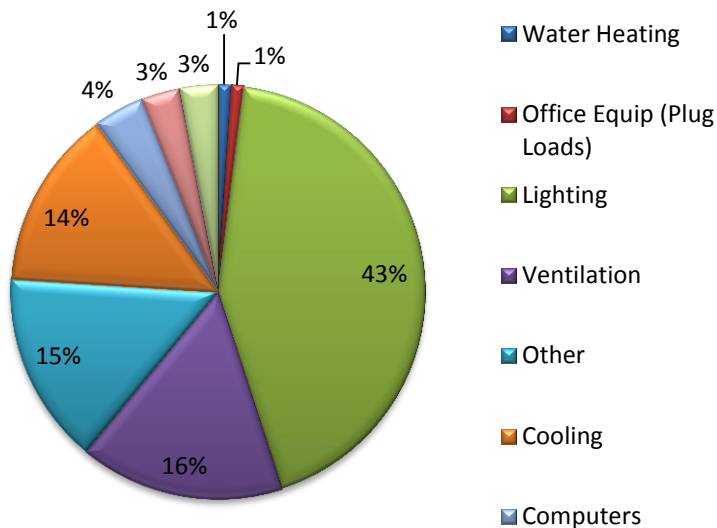
	Guide	Recommendation	References
1 Size – Square Foot (SF)	<ul style="list-style-type: none"> Must have industry recognized approach; CHI used the gross SF as identified by DOE. <i>(Department of Energy)</i> 	<ul style="list-style-type: none"> Develop a template to record your hospital inventory and SF attributes 	<ul style="list-style-type: none"> CMMS Inventories Record drawings
2 Age	<ul style="list-style-type: none"> Age of facilities will be important when assessing capital replacement and existing structure's integrity. 	<ul style="list-style-type: none"> Track this data along with the other facility attributes. It is a required data point for Energy Star 	<ul style="list-style-type: none"> CMMS Inventories Record drawings Accounting
3 Classify	<ul style="list-style-type: none"> Small / Medium / Large – DOE definitions based on SF. <i>(Energy U. D., 2012)</i> 	<ul style="list-style-type: none"> Do this step up front to allow the overlay of the appropriate national standard benchmarks 	<ul style="list-style-type: none"> CMMS Inventories Industry

Understanding the Basics of the Facilities

With inventories complete, let's see what information is available:

Profiles

Typical Energy Profile - Electricity



Source: Managing Energy Costs in Hospitals

Data from the U.S. Energy Information Administration show that cooling, lighting, and ventilation account for 72 percent of electricity use, and space heating dominates natural gas use at 57 percent.

Applying Profile Data

- Profiles provide a roadmap of electricity use.
- They identify early opportunities.
- They provide a baseline to measure from.
- Can be used to validate assumptions

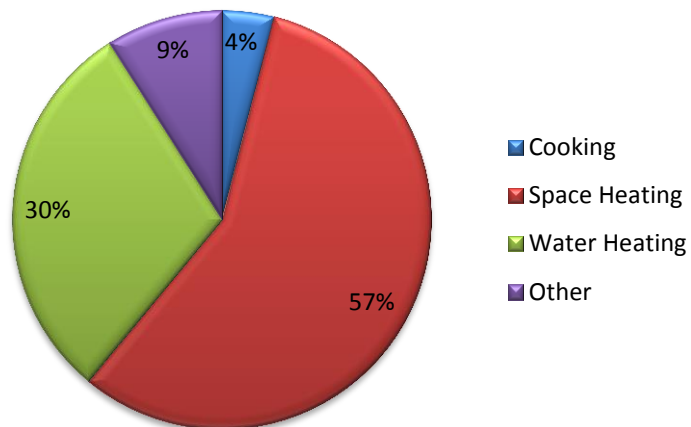
Water Heating	1%
Office Equip (Plug Loads)	1%
Lighting	43%
Ventilation	16%
Other	15%
Cooling	14%
Computers	4%
Space Heating	3%
Refrigeration	3%

Understanding the Basics of the Facilities

With inventories complete, let's see what information is available: Profiles

Profiles

Typical Energy Profile – Natural Gas



Source: Managing Energy Costs in Hospitals

Applying Profile Data

- Profiles provide a roadmap of electricity use.
- They identify early opportunities.
- They provide a baseline to measure from.
- Can be used to validate assumptions

Cooking	4%
Space Heating	57%
Water Heating	30%
Other	9%

Data from the U.S. Energy Information Administration show that cooling, lighting, and ventilation account for 72 percent of electricity use, and space heating dominates natural gas use at 57 percent.

Understanding the Basics of the Facilities

With inventories complete, let's see what information is available:

Existing Vendor Programs

Trane Energy Dashboard



Provides for
"Real-time"
Management

Vendor Dashboards

Pros -

- Intuitive user dashboards
- Fully customizable
- 24/7 monitoring capabilities.
- Scalable: House meter to individual equipment
- Set & Track Energy Budgets
- Track/Plan for peak usage

This is huge!!

Cons -

- Require meters and certain levels
- Requires funding: monthly/annual

Understanding the Basics of the Facilities

With inventories complete, let's see what information is available:

Utility Bills

Bill Paying Service



GPO-contracted
business partner



Bill pay Service

Pros -

- Automated service
- Consumption data captured in database
- Links directly with Energy Star PortfolioManager®
- Reduces the cost of handling an invoice

This is huge!!

This is huge!!

Cons -

- Static look at consumption
- Must have some level of understanding of the program to navigate successfully

Understanding the Basics of the Facilities

With inventories complete, let's see what information is available:

Utility Bills

Paper Bills



- It is Important to know your utility rates (what you pay) and your utility consumption (how much you use).
- You could consume less and pay more if rates increase.

Bill pay Service

Pros -

- Provide monthly consumption data
- 12 month periods can be tracked
- Consumption data can be manually uploaded into Energy Star PortfolioManager®
- Lots of history available

Cons -

- Static look at consumption
- They are paper
- Can require scanning to reduce storage impacts

Understanding the Basics of the Facilities

A simultaneous operation that must be considered that can be concurrent to gaining the insight to your facilities identifying and implementing Energy Conservation Measures (ECM)

	Description	Example initiatives
Lighting Interior/exterior	<ul style="list-style-type: none">▪ Energy inefficient lighting [low hanging fruit]	<ul style="list-style-type: none">▪ T12 to T8 conversions▪ T8 to LED▪ Lighting controls/sensors
HVAC	<ul style="list-style-type: none">▪ Energy efficient operations of the total system (<i>Bonnema, 2010</i>)	<ul style="list-style-type: none">▪ Variable freq. drives▪ Economizers (<i>Bonnema, 2010</i>)
Building Envelope	<ul style="list-style-type: none">▪ Roofs (<i>Bonnema, 2010</i>)▪ Walls▪ Windows	<ul style="list-style-type: none">▪ Air seals▪ Insulation (<i>Bonnema, 2010</i>)

CHI leveraged its GPO's Facility Infrastructure Contract Suite to support these acquisitions.

How do you measure?

Understanding the Basics of the Facilities

	Standards	Source	Benchmark
kWh	<ul style="list-style-type: none"> kWh/SF 	<ul style="list-style-type: none"> Utility bills Energy meters 	<ul style="list-style-type: none"> Industry Standard Frequency Within the system
EUI	<ul style="list-style-type: none"> Whole facility 	<ul style="list-style-type: none"> Energy Star Portfolio Manager® 	<ul style="list-style-type: none"> Industry Standard Frequency Within the system
Natural Gas	<ul style="list-style-type: none"> Therm (100,000 btu) 	<ul style="list-style-type: none"> Utility bills Energy meters 	<ul style="list-style-type: none"> Industry Standard Frequency Within the system
Water	<ul style="list-style-type: none"> Gal/SF 	<ul style="list-style-type: none"> Utility bills 	<ul style="list-style-type: none"> Industry Standard Frequency Within the system

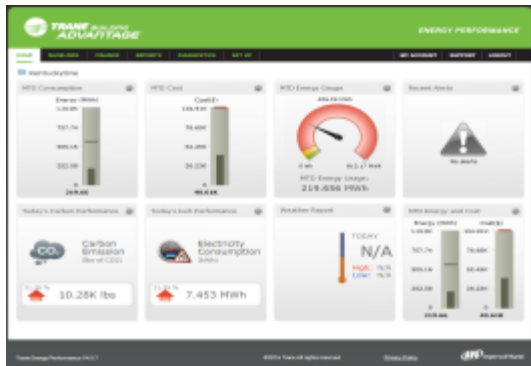
“Deciding on which criteria to build goals and standards is an important step in successful benchmarking.” (Filippino, 2016)

Understanding the Basics of the Facilities

Now that you have your data...what do you do with it?

Existing Vendor Programs

Trane Energy Dashboard



Utility Bills

Bill Paying Service



Utility Bills

Paper Bills



Accounting

Data Management
Tool - ???

Excel

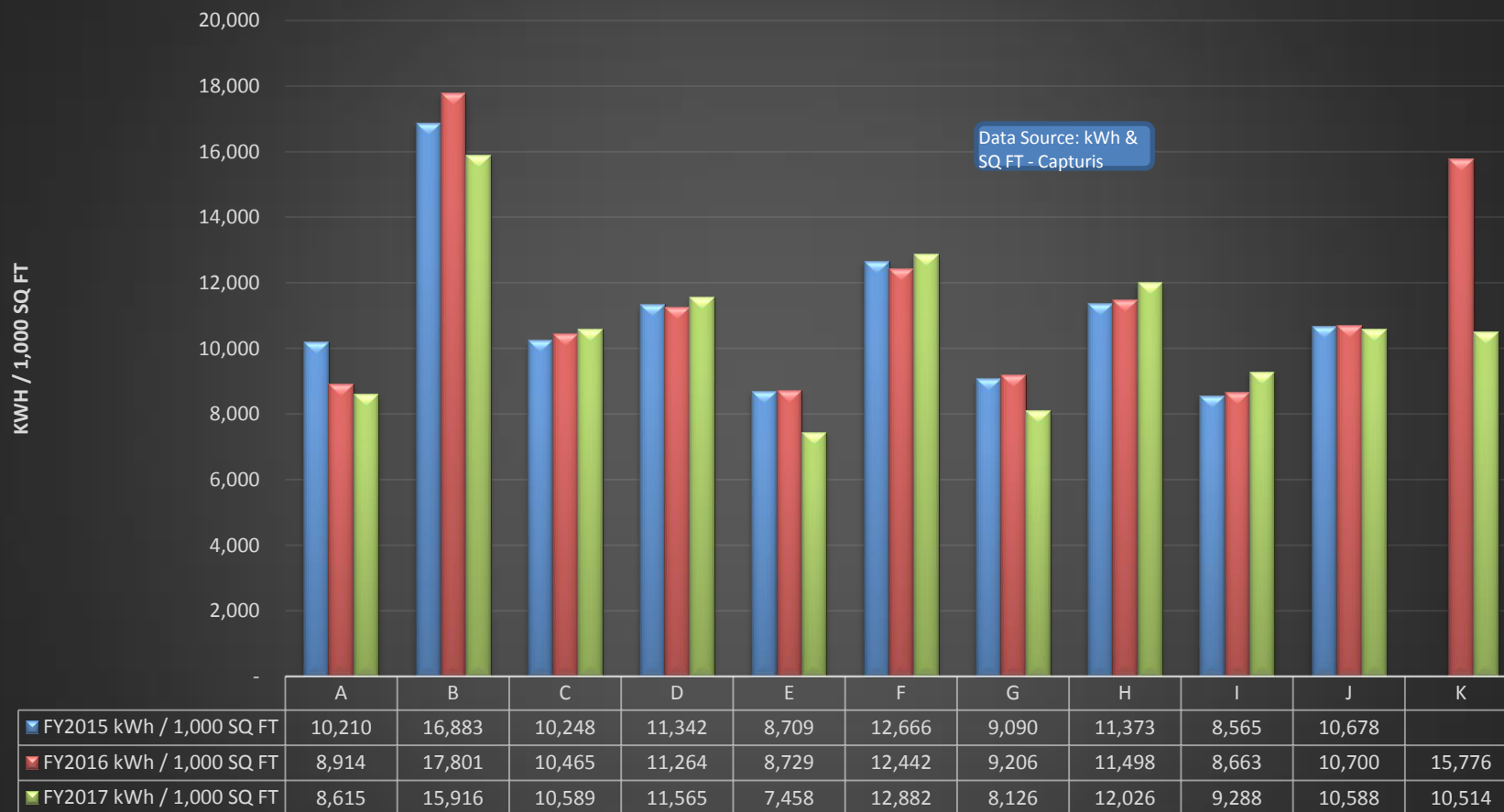
Access

Custom

Labor

Understanding the Basics of the Facilities

CHI Division kWh/1K SF (Year over Year)

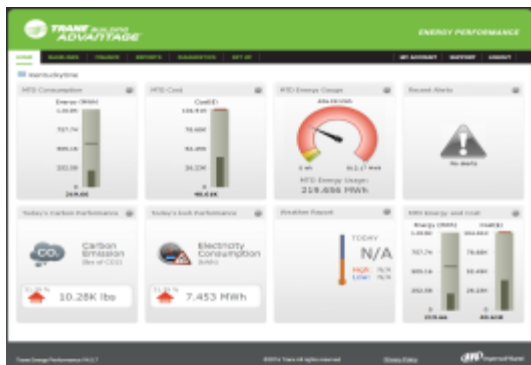


Understanding the Basics of the Facilities

Now that you have your data...what do you do with it?

Existing Vendor Programs

Trane Energy Dashboard



Utility Bills

Bill Paying Service



Utility Bills

Paper Bills



MyPortfolio Sharing Reporting Recognition

Energy Cost Intensity Report (currentReportPage.asOfDate.txt 1/17/2017, 9:25:02 AM EST)

Energy Cost Intensity is the annual cost of all energy at your property on a per square foot basis. This will include the costs for all meters for which you have entered cost values.

Portfolio Average Energy Cost Intensity

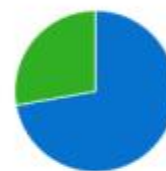
-0.23 ▸ Change in Average Energy Cost Intensity

2.48 ▸ Current Average Energy Cost Intensity

2.71 ▸ Baseline Average Energy Cost Intensity

Properties Included: 36

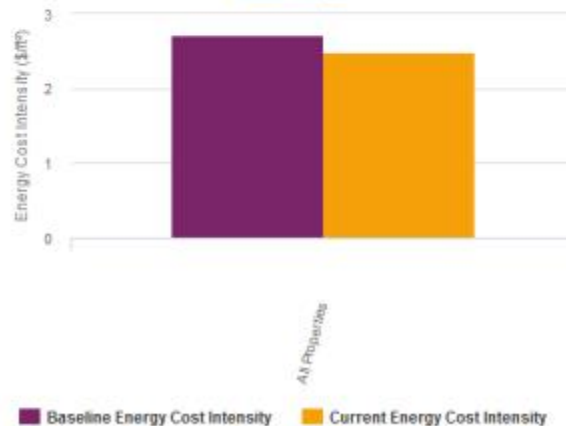
Your Properties Compared to the National Median Energy Cost Intensity



■ Energy Cost Intensity
Equal to or Below the Median
■ Energy Cost Intensity
Above the Median

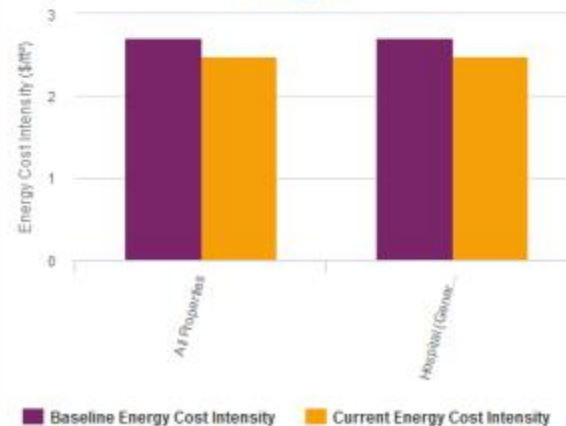
Energy Cost Intensity by Group

[Select Groups](#)



Energy Cost Intensity by Property Type

[Select Types](#)



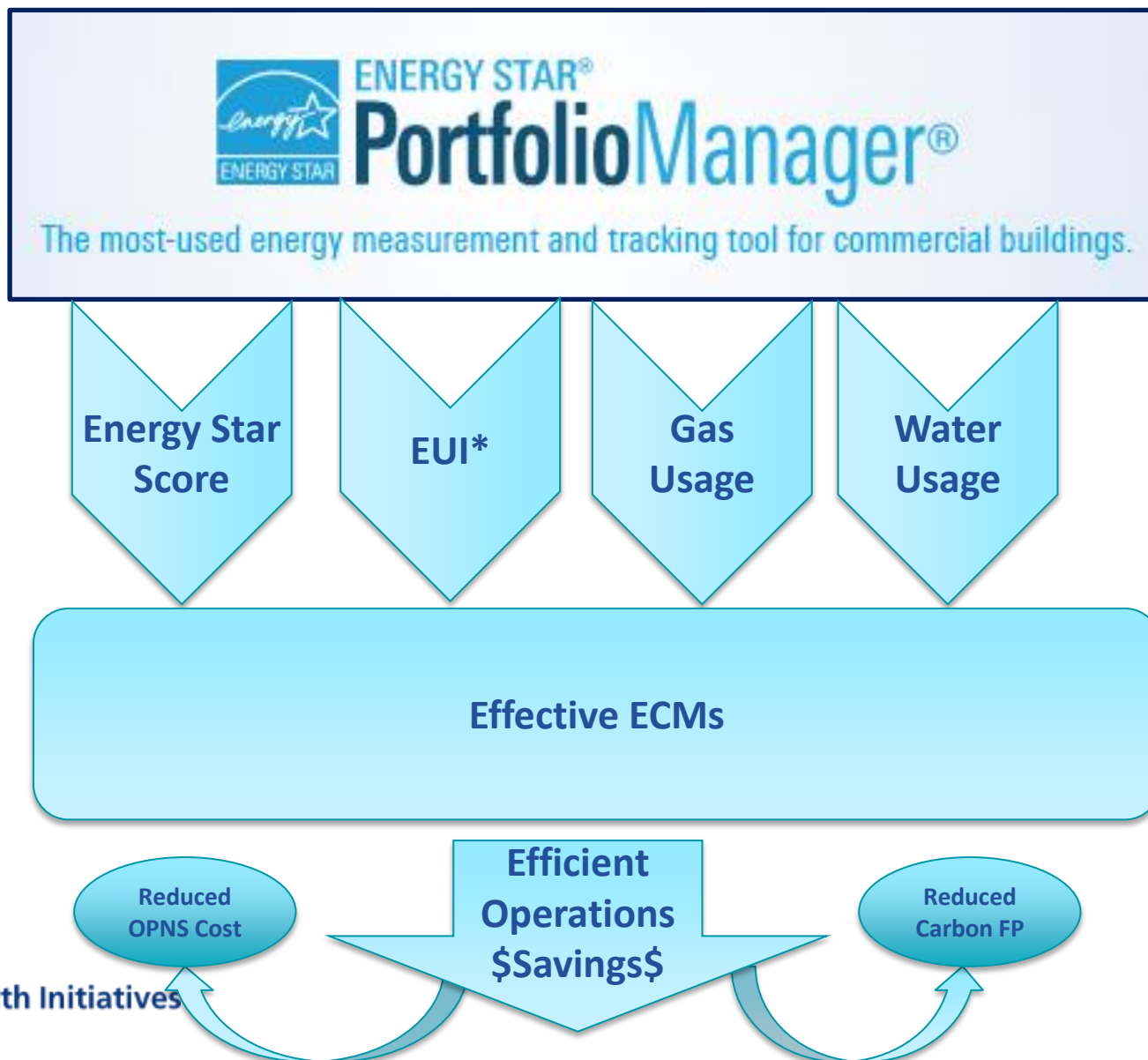
< Previous Report

Next Report >

[Cancel](#)

Understanding the Basics of the Facilities

Now that you have your data...what do you do with it?



Lessons Learned

Lessons Learned

People / Communications / Systems / Rates






	Issue	Impact
1 People	<ul style="list-style-type: none">▪ Education▪ Education▪ Education	<ul style="list-style-type: none">▪ Energy Star data can be in error▪ Inconsistent facility scores
2 Communications	<ul style="list-style-type: none">▪ Must be consistent in telling the story	<ul style="list-style-type: none">▪ Lack of leadership support▪ Loss of focus
3 Systems	<ul style="list-style-type: none">▪ Effective tool to manage data	<ul style="list-style-type: none">▪ Understand early▪ Plan and implement expandable systems▪ Be careful with propriety systems

Lessons Learned

Updating Facility Attributes

	Issue	Impact
4 Capturis	<ul style="list-style-type: none">▪ Facility attributes must be updated for transmission to Energy Star▪ Must be prudent in updating	<ul style="list-style-type: none">▪ Energy Star data can be in error▪ Inconsistent facility scores
5 Energy Star	<ul style="list-style-type: none">▪ Sequence of updates are critical; must start in Capturis.▪ Vendors did not understand this sequence	<ul style="list-style-type: none">▪ Energy Star data can be in error▪ Inconsistent facility scores
6 Custom Tracker	<ul style="list-style-type: none">▪ Facility attributes must be updated; SF/Labor/Etc.	<ul style="list-style-type: none">▪ Assessments can be in error▪ Unrealistic expectations
7 Tariffs / Taxes	<ul style="list-style-type: none">▪ Understand when/who/how to address	<ul style="list-style-type: none">▪ Understand early▪ Start early communications with utilities▪ Seek help....

Lessons Learned

Item	Importance	Success
<ul style="list-style-type: none"> Plan 	<ul style="list-style-type: none"> Achievable Funded Scale-able Continuous commissioning 	
<ul style="list-style-type: none"> Leadership Buy-In 	<ul style="list-style-type: none"> Provides credibility to program Leadership owns part of the process 	
<ul style="list-style-type: none"> Data Source 	<ul style="list-style-type: none"> Reliable Verifiable 	
<ul style="list-style-type: none"> Management System 	<ul style="list-style-type: none"> In-house, Excel, Custom Vendor provided 	
<ul style="list-style-type: none"> Relationships w/in the company 	<ul style="list-style-type: none"> Supply Chain Budget/Accounting Support Services' EVS, Security, Food & Nutrition, IT 	

Conclusions

Conclusions

Comprehensive Energy Management Program

You Have to Start Somewhere

- Plan
- Facilities
 - Locations
 - Size
 - History
- Industry Standards
 - ASHE
 - DOE
 - IFMA
- Data Source
- **BENCHMARK!!**

You MUST have Support

- Leadership – Local
- Leadership – National
- Sister Agencies
 - Supply Chain
 - Finance
 - Support Services

You MUST Stay Engaged

- Manage Data
 - Daily
 - Weekly
 - Monthly
 - Annual
- Report the good stuff
- Make competitions
- Celebrate the wins

Works Cited:

Bonnema, S. P. (2010). *Large Hospital 50% Energy Savings: Technical Support Document*. Golden, CO: National Renewable Energy Laboratory.

Department of Energy, E. S. (n.d.). *Space Use Information - Hospital (General Medical and Surgical)*. Retrieved January 1/10/17, 2017, from Energystar.gov:
[https://www.energystar.gov/ia/business/tools_resources/target_finder/help/Space_Use_Information_-_Hospital_\(General_Medical_and_Surgical\).htm](https://www.energystar.gov/ia/business/tools_resources/target_finder/help/Space_Use_Information_-_Hospital_(General_Medical_and_Surgical).htm)

Energy, D. o. (2013). *Better Buildings, EMIS Crash Course*. U.S. Department of Energy.

Energy, U. D. (2012). *Energy Information Administration; 2007 Commercial Buildings Energy Consumption Survey: Large Hospital Tables*. Washington, DC: U.S. Department of Energy.

Engineers, A. S. (2013). *Benchmarking 2.0: Health Care Facility Management Report*. Houston, TX: International Facility Management Association (IFMA).

Filippino, M. (2016, Fall). Operations and Maintenance Benchmarking: Finding the Numbers That Work for You. *Inside ASHE*, pp. 42-43.

Pless, S. B. (2013). *Advanced Energy Retrofit Guide - Practical Ways to Improve Energy Performance*. National Renewable Energy Laboratory.

QUESTIONS



HealthTrust Sustainability Resources
<https://members.healthtrustpg.com/>

Member Portal

- Sustainability resources added to the Member Portal
- Now three ways to find Sustainability info from the home page

1

Member Portal

HEALTHTRUST

Physician Services | Advisory Boards | Customer Service | Tools

CONTRACTS | REPORTS | PHARMACY | SOLUTIONS | NEWS | EDUCATION

Member Portal

Go to Catalog >

Healthier Furniture & Furnishings

HealthTrust and many of its furniture and furnishing suppliers are proud to support you in meeting the Healthier Hospitals 1.0 and 2.0 Safer Chemicals Challenge.

Learn More

Learn more about the need for manufacturers to eliminate the use of formaldehyde, perfluorinated compounds, PVC, antimicrobials and flame retardants in hospital furniture and furnishings.

Download

New to HealthTrust?

If you are a new member or a new employee at one of our member facilities, review this document for important information on HealthTrust and Pharmacy including where and how to find what you need.

Download Packet

Sustainability

HealthTrust's goal is to support the sustainability initiatives of our members by effectively incorporating the principles of environmentally preferable purchasing (EPP) into the contracting process.

Learn More >

Contract Corner

Achieve maximum savings with your GPO membership through the Contracts area. Explore often and take advantage of HealthTrust's broad contract portfolio. Contact your Account Director for assistance.

Explore Contracts >

Meet Your Member Services Support Team

Ally Tabro
Member Support Analyst

Rebecca Taylor
Member Support Analyst

Debbi Spears
Member Support Analyst

The SOURCE Magazine

The Source magazine is our quarterly publication that gives you insights into healthcare best practices. In this issue - "Total Transformation: How Columbus Regional Health Earned Its First Financial Gain in Four Years"

Username: TheSourceOnline
Password: MemberBenefit2
Read Current Issue | View Archives

Message from HealthTrust CEO

In the Q1 issue, Senior Vice President of Marketing and Sales **Doug Swanson** shares his thoughts on what the "next-generation" GPO will look like, and why HealthTrust's committed model has all the key ingredients for long-term success.

More from Ed Jones >

Useful Links

Ethics & Compliance
Fee Disclosure Reports
Sustainability
Sustainability Transparency & Integrity Program
Terms of Use

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New graphic bars created for easy recognition of sustainability initiatives on:

- Sustainability page
- Related contract pages (i.e., food, FIS)

Member Portal Physician Services Advisory Boards Customer Service Tools Welcome Faye Porter

HEALTHTRUST

[CONTRACTS](#) [REPORTS](#) [PHARMACY](#) [SOLUTIONS](#) [NEWS](#) [EDUCATION](#)

Sustainability

Our goal
HealthTrust's goal is to support the sustainability initiatives of our members by effectively incorporating the principles of environmentally preferable purchasing (EPP) into the contracting process.

While lack of agreed upon standards within the industry makes capturing sustainability information extremely difficult, creating a process that is relevant and meaningful in assisting members with purchasing sustainable products remains our top priority.

What is Environmentally Preferable Purchasing?
Environmentally Preferable Purchasing (EPP) involves actively contracting for and purchasing products or services whose environmental impacts have been considered and found to be less damaging to the environment and human health when compared to market competitors.

How HealthTrust Approaches EPP
Since 2008, HealthTrust has worked closely with Practice Greenhealth (PGH) and its GPO workgroup to develop language for industry-wide, contract-specific supplier question sets related to EPP attributes of products and services in applicable categories.

HealthTrust has developed an [Environmental Sustainability Network](#) made up of members to review related EPP questions as part of the supplier RFP process. Potential supplier responses are reviewed for feedback and sustainability-related attributes that can be used as differentiators in making recommendations to related advisory boards during the contract awards process.

While there is still a long way to go as an industry, HealthTrust will continue to work with PGH to refine the standardized questions, identify the critical information that is useful in making sourcing recommendations, and create question sets for categories that do not exist today.

Realizing that awareness is an issue, our goal is to share sustainability information with members as part of the contract launch process.

HealthTrust's long-term goal is to develop meaningful attributes that can be easily identified by members at the contract, and ultimately the line-item level to assist members with making decisions related to sustainability at the time of ordering.

For more information about HealthTrust's Sustainability Initiatives or to join the Environmental Sustainability Network, contact Faye Porter at sustainability@healthtrustpg.com.

Sustainability Topics

- Antibiotic-free Protein Sources
- Dioxin-free Diapers & Package Recycling
- Healthier Furniture & Furnishings
- Reprocessing Resources

Related Links

- » [HealthTrust's Environmental Sustainability Network](#)
- » [Sustainability in Healthcare](#)
- » [Sixth "Champion for Change" Award](#)
- » [Practice Greenhealth](#)
- » [Health Care Without Harm](#)
- » [Healthier Hospitals Initiative](#)

Related Resources

- [Environmentally Preferable Product Certification](#)
- [A Greener OR](#)
- [Building Health-Informed Design](#)
- [Energy-focused Solution for FIS](#)

HealthTrust 2017 Sustainability Webinar Series

Upcoming Sustainability Webinars:

- **March 23:** Waste streams management (including pharmacy waste)
- **April 27:** Safer chemicals and healthier food
- **May 25:** Transportation, electric vehicle charging stations; LEED buildings, community connections
- **June 7:** Easy sustainability wins with EVS

Register for webinars at www.healthtrustpg.com/education

View past programs in the “On-demand” section at:

www.healthtrustpg.com/education