Ohio Healthier Hospitals

A COLLECTION OF ENERGY CASE STUDIES

2015

PREPARED BY

Healthier Hospitals

Practice Greenhealth

Health Care Without Harm
Health Care Without Harm seeks to transform the health sector worldwide, without compromising patient safety or care, so that it becomes ecologically sustainable and a leading advocate for environmental health and justice. Visit www.noharm.org for more information.

The Ohio Hospital Association (OHA) Energy and Sustainability Program is an unbiased source of expertise to assist hospitals’ best use of energy and resources. Its goal is to improve the economic sustainability and resilience of OHA member facilities. Learn more at www.ohiohospitals.org/energy.

The Healthier Hospitals Initiative (HHI) was launched in 2012 as a three-year national campaign designed to implement a new approach to improving environmental health and sustainability in the health care sector. HHI was led by three nonprofits—Health Care Without Harm, Practice Greenhealth, and Center for Health Design—with the help of 12 sponsoring health systems. In 2015, HHI will continue to help hospitals and health care systems reduce their impact and improve health as a free program of Practice Greenhealth.

More information is available at www.healthierhospitals.org.

Practice Greenhealth is the nation’s leading health care membership community that empowers its members to increase their efficiencies and environmental stewardship while improving patient safety and care through tools, best practices and knowledge. To learn more about Practice Greenhealth www.practicegreenhealth.org.

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Dear Friends,

As Ohio hospitals strive to achieve the Triple Aim – better patient care, improved population health, and lower costs – energy efficiency, resiliency, and clean energy investments become strategic considerations for health care leaders.

Through a series of case studies, this report offers a roadmap for Ohio hospitals to implement energy reduction strategies that will lead to increased cost savings and improved public health.

We invite you to join the conversation to improve the health of our Ohio communities through energy reductions and clean energy investments.

Best,

Jim Baer, CEO
Highland District Hospital

Ron Dziedzicki, COO
UH Case Medical Center

Bill Peacock, COO
Cleveland Clinic

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Given the energy intensive nature of a hospital environment, health care has started examining energy efficiency as a mechanism for significant cost savings. Energy Star for Healthcare reports that for every $1 a nonprofit healthcare organization saves on energy is equivalent to $20 in new revenues for hospitals1.

Beyond cost savings, hospitals have the opportunity to improve the air quality of the patient population they serve by reducing energy emissions. The 2015 State of the Air produced by the American Lung Association2 reported that while the air in Ohio has improved over the last 15 years, there is work to be done. Cleveland, Akron, Canton, Cincinnati, and Dayton areas still ranked in the worst 10 cities for year-round particle pollution. As of 2014, there were nearly 200,000 children and 680,000 adults with asthma at high risk from air pollution in Ohio.

Further, the Burden of Asthma in Ohio Report from the Ohio Department of Health3 indicates that children’s asthma rates are at 15% compared to the national CDC reported average of 8.3%4.

In terms of both a public health and cost savings potential, there are great opportunities for Ohio hospitals to start on an energy reduction journey.

**HEALTHIER HOSPITALS IN OHIO**

Healthier Hospitals is a free program of Practice Greenhealth for hospitals beginning their sustainability and energy journey. Currently, there are 106 hospitals participating in Ohio, 80 of which are enrolled in the Leaner Energy Challenge5.

**OHA ENERGY AND SUSTAINABILITY PROGRAM**

Ohio Hospital Association (OHA) Energy and Sustainability Program has more than 100 member hospitals benchmarked in ENERGY STAR Portfolio Manager, with over 40 GWh saved in 20144. This is the equivalent to the yearly consumption of nearly 4,000 homes and according to the Practice Greenhealth Energy Impact Calculator7, results in an estimated reduction of 769 respiratory symptoms and 139 work days gained.

**OHIO HOSPITAL BEST PRACTICES AND GETTING STARTED**

Featuring four Ohio hospital case studies, this report offers energy reduction solutions that facilities ranging in size from critical access hospitals to large health systems can implement.

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3. [http://www.odh.ohio.gov/~media/ODH/ASSETS/Files/eh/asthma/Burden%20of%20Asthma%20in%20Ohio%202012.pdf]
4. [http://www.cdc.gov/asthma/most_recent_data.htm]
5. [http://healthierhospitals.org/hi-challenges/leaner-energy]
6. [http://www energia.org/energy]
7. [https://practicegreenhealth.org/tools-resources/energy-impact-calculator]
LEADERSHIP: ENERGY AS A KEY PRIORITY

An important note is the critical role that leadership plays in the ability of an energy program to be implemented. These Ohio hospital case studies all have that common thread – support from the top.

- **Highland District Hospital**
  Leadership made the decision in 2012 that 50% of the capital improvement budget would go towards upgrading boilers and chillers.

- **Cleveland Clinic**
  In addition to the Department of Energy’s 2020 Building Challenge, a separate energy budget was allocated for projects to help meet energy reduction targets.

- **University Hospitals**
  A green revolving fund is set up for one of the medical centers, and there are efforts underway to expand that for the health system.

- **ProMedica**
  Setting a system-wide energy reduction target of 7% from a 2011 benchmark allowed energy projects to rise in priority for budget allocation.

Determining an energy baseline is where the journey starts. The Ohio Hospital Association offers free benchmarking support for member hospitals to input data into ENERGY STAR Portfolio Manager. Once the baseline is established, there are a number of opportunities to consider.

NO/LOW COST

By committing to benchmarking data through ENERGY STAR Portfolio Manager, healthcare facilities are introduced to a wide range of opportunities in terms of cost savings and energy reductions. With such close margins, energy projects can lead to large annual savings at very low costs. University Hospitals’ Employee Energy Competition is a great example of a no-cost initiative to result in energy savings.

MODERATE INVESTMENT

Energy retrofits and updating equipment entail a moderate upfront investment, and a great option for facilities that are suffering from high energy costs associated with aged equipment or inefficient energy operations. The Highland District Hospital case study is a good example of the savings associated with upgrading equipment.

HIGH INVESTMENT

Facilities that have already laid the foundation for a robust energy efficiency program can start to look into new technology that can take a hospital’s energy program to the next level. Both Cleveland Clinic’s OR setback pilot and ProMedica’s installation of the Combined Heat and Power (CHP) system at one of their hospitals are examples of making investments with tangible results.

LOOKING FORWARD: CLEAN ENERGY INVESTMENTS

According to the Practice Greenhealth Benchmark report, 21% of award-winning hospitals reported purchasing or generating renewable energy in their portfolio in 2013. Hospitals are diversifying their energy portfolios which is leading to increased resilience, improved financial performance, improved community health and fulfillment of their organizational mission.
THE PROBLEM
With a changing healthcare landscape and a community business closing, it was imperative that Highland District Hospital reduced its costs not only for the hospital’s budget but to help minimize costs for the patients in its community.

STRATEGY SELECTED
Senior leadership partnered with the Ohio Hospital Association (OHA) Energy and Sustainability Program to complete the benchmarking process into ENERGY STAR, which included an energy audit of the hospital. This process identified two initial projects: lighting retrofits and replacing boilers/HVAC.

The OHA Energy and Sustainability Program was a natural choice not only because it is free for members, they also bring a demonstrated value and context since they have completed benchmarking for more than 100 hospitals and over 40 hospital energy audits across the state of Ohio. This “no-strings attached” approach delivers transparent and objective recommendations, as well as experience to draw upon other common stories and subsequent remedies from other Ohio hospitals.

IMPLEMENTATION PROCESS
As Highland District is a critical access hospital with limited staff, an important part of this project team was the OHA Energy team member. After benchmarking and quantifying the facility’s energy baseline, engineers did a day-long energy walk-through based on the ASHRAE Level 1 audit process. During this initial visit, the OHA Energy team members were able to meet with the CFO, share their findings, and start building the relationship. This led to the development of a multitude of projects, starting with re-lamping the old side of the hospital building to switch out from T-12 to T-8 bulbs. The Ohio Hospital Association helped to identify and facilitate multiple rebates through the local utility resulting in $20,000 back to Highland District for the lighting project.

The team looked next to some necessary upgrades to the infrastructure, which included upgrading to two boilers at 80 hp, a 480 volts chiller, and a multistack to recapture heat to meet hot water demand. As this hospital is a pillar in its small community and focused on staying independent, this enabled the senior leadership team to make financial decisions for the long term. Although the boilers and chillers were 50% of their capital budget for 2012, the leadership team made the commitment as they understood that the financial long-term gain was worth the investment.

Finally, there were some operational changes such as occupancy sensors for equipment rooms, streamlined from three to one computer system control for the HVAC, and some variable frequency drives (VFDs) were installed.
**BENEFITS**

- Reduced general maintenance for staff with new equipment.
- Improved employee satisfaction with internal air quality and comfortable temperatures.

**RESULTS**

- Energy costs reduced and received $20,000 in rebates from local utility.
- Improved ENERGY STAR score of 64.

**CHALLENGES AND LESSONS LEARNED**

One of the challenges that a rural hospital often faces is a disadvantage in the bid process due to travel time. In this particular case, it only extended the length of the bid process, which ultimately added to the overall project time.

Highland District’s CEO, Jim Baer, had these three pieces of advice for a CEO of another rural hospital:

1. Look at energy as a significant savings opportunity, especially for the long-term.
2. Look for funding or resources – local providers, the state of Ohio, or other partnerships such as state hospital associations.
3. Start with an energy audit; this gives a roadmap of the short, medium and long term priorities.

Despite its initial success, this is only the beginning for Highland District Hospital. The critical access hospital is anticipating several upcoming projects in order to become an ENERGY STAR certified hospital. These include implementing an automatic computer shutdown program to further reduce energy, a water conservation program by changing toilets to low flow (1.6 gpf), light sensors for offices and bathrooms, and a parking light retrofit. Additionally, Highland District Hospital has partnered with the local utility service provider to participate in a Continuous Energy Improvement (CEI) hospital and university group.
THE PROBLEM

Even though energy conservation is often referred to as a low-hanging fruit, individual behavior change continues to present a challenge. Individual choices ultimately influence the energy costs and environmental impact of the health system.

STRATEGY SELECTED

The UH Employee Energy Challenge idea came from CleanMed, a national sustainability health care conference, with the goal to incentivize individual energy saving actions at work and at home, illustrate their impact back to the group taking action, and inspire adoption of new energy saving behavior. Employees pledged their energy aware actions through an incentivized survey mechanism.

Two criteria were used when creating energy awareness actions in the pledge: actions could either be under employees’ personal control, such as taking the stairs, or could require outside influence to accomplish, such as speaking to a supervisor about switching from incandescent to LED lighting. In this way, employees could be empowered by personal choices similar to what they might do at home, while also having the opportunity to influence indirect energy actions at work by engaging on a deeper level with colleagues. Considering the importance of indirect actions in this campaign, leadership support was a key component of this strategy, in addition to energy awareness resources.

IMPLEMENTATION PROCESS

The implementation process was set up into phases:

Pre-Challenge Phase: Communications Were Disseminated to Each Medical Center Via:

- An energy specialist who used a booth at medical centers to promote energy programs.
- Presentations at the system-level Sustainability Council and Facilities meetings.
- Flyers distributed to facility operation directors and Green Teams via email.
- Meetings and site-specific email distributions from facility managers and communication directors at two newer facilities.
- Postings on the internal employee website and in weekly internal “news” emails.

Phase I: Energy Challenge Registration and Pledge

- Employees were required to register and pledge to adopt energy conservation actions (energy aware actions) for three months, including tracking home energy bills.
• Upon online submission of the registration/pledge, the energy awareness webpage opened for participants with access to energy education resources for home and work.

**Phase II: Follow-Up – Three Months Later**

• All participants were surveyed and asked to comment on actions they took and will continue to pursue in order to quantify impacts of the Challenge on individual behavior.

• Participants also reported electric and natural gas usage for the three months of the challenge, which was compared to regional averages and reported back to them.

• A prize drawing amongst the participants who completed both phases was accomplished through random selection (grand prize was a Nest home thermostat and iPad mini, with two additional prizes of LED bulbs).

• The final communication piece, called “Energy Usage: UH and You”, tied together individuals’ efforts in particular areas (using power strips) and how they are related to UH Energy efforts (HHI Leaner Energy Challenge). This was published on the Greening UH Energy webpage and presented to the System Sustainability Council.

**BENEFITS/OUTCOMES**

• Participants who reported home electricity usage used on average 45 kWh less/month than the monthly OH average of 892 kWh.

• Survey results indicated intentional long-term behavior change by participants, with top actions being posting energy education and having energy conversations with supervisors.

• Participation of new UH employees: 121 out of 456 Phase I participants were from new facilities acquired by the system.

• 75% of participants found the Greening UH Energy webpage useful and 85% said they would join another energy challenge in the future.

• The program identified engaged employees who can be cultivated as future front-line green team members.

**CHALLENGES AND LESSONS LEARNED**

• As this was a communications-focused employee engagement program, support from communication teams and facility-level operations directors were key to its success.

• Future energy challenges should include an interactive survey tool or energy usage calculation tools to give immediate feedback to participants.

• The competition became a great welcoming opportunity for employees from new medical centers that recently joined the UH health system.

• Participant survey feedback suggested: opportunities to better prepare managers on UH Energy practices, new initiatives to make employee conversations more productive, offering energy provider and energy saving device discounts through the employee discount program, and awarding HealthMiles (discount off health insurance premium) for participation.
THE PROBLEM

Heating, ventilation and air conditioning (HVAC) is the single most energy-intensive component in the health system’s energy profile (51%). There are 215 operating rooms (ORs) across the health system running multiple cases per day. Because of the ORs’ requirements for air changes per hour, strict temperature and humidity parameters, pressure relationships, and energy-intensive surgical lighting systems, OR HVAC systems came into sharp focus as a strategic priority for energy demand reduction.

STRATEGY SELECTED

The first step was to illustrate the scale of the opportunity that OR setbacks presented. A third-party engineering firm assessed OR occupancy, existing conditions and costs to implement, control and maintain an OR HVAC setback strategy.

Facilities Institute Guidelines (FGI) and the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) guidelines govern the minimum total and outdoor air change rates for ORs to maintain temperature, ensure particulate removal, and overcome equipment loads. ANSI/ASHRAE/ASHE Standard 170-2013: Ventilation of Health Care Facilities requires a minimum of 20 ACH total and four ACH of outdoor air when the room is in use. Cleveland Clinic’s design specification exceeded the guideline by 5 ACH, with no measurable benefits. ASHRAE 170 and many state codes also allow the number of air changes to be reduced when the space is unoccupied1. OR HVAC setback, also referred to as “unoccupied setback”, is an energy saving strategy that reduces the amount of air supplied to an OR when the room is not in use while still maintaining temperature and humidity ranges. HVAC systems run all night—even when the OR is unoccupied. Facilities recognized the enormous potential that unoccupied settings presented - on the order of $2,000,000 per year2. Yet, clinicians had concerns about needing to condition the space at a moment’s notice and require assurances that the implementation will not negatively impact patient safety or infection rates.

IMPLEMENTATION PROCESS

In collaboration with the Infection Prevention Department, Surgical Operations Executive Committee, and the Design and Planning Department, the Facilities Department adjusted all main campus ORs to 20 ACH and OR design standards were adjusted down to the 20 ACH per ASHRAE 170’s guidance.

The team included representatives from facilities, design and planning team, surgical operations, infection prevention, surgical staff, and other key stakeholders. Their task was to evaluate and provide a recommendation for unoccupied settings.

• Identify peer facilities that implemented setbacks with no safety risks.
• Identify what the users of the space needed versus wanted.

SUMMARY

• To meet the Cleveland Clinic’s $12M energy demand reduction target1, one of the reduction strategies included an analysis of the operating rooms (ORs).
• OR air exchange rates, measured in air exchanges per hour (ACH), were investigated as an energy conservation measure. It was known that OR ACH rates remained high even when surgical cases were not being performed. This included nights and weekends.
• Annual air balance reports indicated that even the surgical conditions ACH rates exceeded universally accepted guidelines by 5-15 ACH.
• Estimated annual savings of $250,000 per year with approval and implementation of OR ACH setbacks down to the levels specified by the engineering guidelines (20 ACH).
• Reducing ACH during the non-surgical periods reduces energy consumption by up to 484,500 kBTU per OR/year (which equates to approximately $10,000 in utility costs). By adjusting the air changes per hour (ACH) to meet the state and federal codes of 20 ACH, this resulted in an estimated annual savings of $250,000 per year.

REDUCING OR AIR EXCHANGE RATES FOR ENERGY SAVINGS

Cleveland Clinic

1) Subsection 1.c. when the space is unoccupied providing that the required pressure relationship to adjoining spaces is maintained while the space is unoccupied and that the minimum number of air changes, temperature and pressure relationships indicated is reestablished anytime the space becomes occupied.
2) Based on findings from third party study funded at request of the Greening the OR Committee.
• Articulate what permissions were necessary to override settings.
• Map out HVAC usage per OR suite.
• Research available technologies.
• Pilot solutions/prove out setbacks.
• Conduct cost benefits analysis when retrofitting an existing facility.
• Implement across the health system.

The end goal of this concept is to reduce the ACH when conditions permit, on a space-by-space basis. This concept was pilot-tested in E Building’s OR Renovation Project, an integrated set of OR design criteria and performance standards.

**BENEFITS OF PILOT RESULTS**

• Based on measured reduction in fan power and cubic feet or air per minute (CFM) of cooling, an estimated $10,000/year/OR can be achieved.
• 20,000,000 kWh of electricity will be saved.
• The system will provide better oversight of room conditions to assure that it is always within the required guidelines for temperature, humidity, pressurization and ACH and make those parameters visible to the surgical team within the room.

**CHALLENGES AND LESSONS LEARNED**

1. **Costs**

   The OR setback strategy can be adopted with little or no additional upfront cost in new construction, while a retrofit of an existing facility requires upfront costs to be weighed against the expected energy savings. Since most OR setback solutions require periodic maintenance, the cost of maintenance should be part of the equation. Pitching for a total cost setback strategy is not an easy sell to a management team focused on cost reductions.

2. **Adaptive Comfort**

   To respond to user differences, ORs may be kept in “ready” mode, i.e. in occupied mode, even though there is no code requirement to do so. Clinical and facility staff are working together to decide which control solution meets the surgical team’s needs while still saving energy.

3. **OR Controls**

   It’s complicated. The facilities/buildings have different and varied HVAC system controls. Designing the right control interface was very important to the success of this project for our various user groups.

4. **Surgical Staff**

   One strategy to ease surgical staff concerns was to automate OR setbacks with the surgical schedule. This is achieved by linking setbacks to the OR scheduling system which programmed the ORs to be set back once the schedule is completed and designed to return to occupied mode 30 minutes prior to the initiation of the daily schedule. A safety feature embedded into the surgical light ensures that setbacks aren’t activated if the surgical light is on. The monitoring system controlling OR setbacks also gives better visibility and control of prescribed temperature ranges for the surgical staff.

   Enterprise implementation is slated for 2015.

**DEMOGRAPHICS**

Cleveland Clinic is a nonprofit multispecialty academic medical center that integrates clinical and hospital care with research and education.

More than 3,000 full-time salaried physicians and researchers and 11,000 nurses represent 120 medical specialties and subspecialties.

The Cleveland Clinic health system includes a main campus, eight community hospitals, more than 75 Northern Ohio outpatient locations, Cleveland Clinic Florida, the Lou Ruvo Center for Brain Health in Las Vegas, Cleveland Clinic Canada, and Cleveland Clinic Abu Dhabi (scheduled to begin seeing patients in 2015).

In 2013, there were 5.5 million outpatient visits throughout the Cleveland Clinic health system and 157,000 hospital admissions.
THE OPPORTUNITY

As a mission-driven, community-based healthcare system, one of the ways ProMedica positively impacts the community is by reducing their energy consumption. The savings associated with energy conservation not only lowers operating cost, but also is re-invested into patient care and the communities that ProMedica supports.

Using 2011 as a benchmark, the health system set out with the goal to reduce energy consumption by 7% at hospitals and largest medical office buildings (MOBs). To this end, ProMedica enlisted energy consultants for benchmarking and to perform ASHRAE Level 2 energy audits. In addition to the energy consultation, ProMedica worked with a utility bill pay service to consolidate all utility bill payments. This consolidation ensured that late payments were avoided, and provided a consistent process for utility data collection. That data was then exported for analysis and input into ENERGY STAR Portfolio Manager for all sites.

STRATEGY SELECTED

An extensive team including leadership, facility managers, service vendors, automation control teams and an assortment of suppliers came together to create and implement the ongoing energy management plan. A number of solutions were selected for the overall energy management plan: LED lights are now installed consistently across the facility, variable frequency drives are being used, and electric motors have been replaced. Additionally, the system-wide Sustainability Council is working to promote individual behavior change (such as unplugging cell phone chargers).

BENEFITS OF A COMBINED HEAT AND POWER SYSTEM

One critical aspect of the energy management plan was the decision to incorporate a combined heat and power system at ProMedica Wildwood Orthopaedic and Spine Hospital. The onsite power system uses natural gas to provide electricity and heat to the hospital. Benefits to the facility include a reduction in annual energy costs, greenhouse gas emissions and source energy use intensity. The compact size and low sound level of the Capstone micro-turbine system was a key consideration because it was housed in the upper floor mechanical room above patient care areas.

The hospital has around-the-clock access to the operation and performance of the system with a distributed generation control system. This web-based dashboard – accessible on mobile devices or computers – provides facility managers with real-time data so that daily energy consumption can be monitored and balanced with the hospital’s needs and the system’s energy production. This increases savings by providing a baseload of electricity and heat generated by the combined heat and power system.
MEASURING SUCCESS

Key performance indicators are prepared monthly and communicated to the ProMedica leadership team on energy intensity, cost avoidance and progress of energy conservation measures for all target facilities. This information is then used to make informative future decisions – such as putting combined heat and power systems in other facilities.

RESULTS

• Source energy use index has decreased over 18%.
• GHG reduction of 700 tons or the equivalent of 115 automobiles saved annually.
• Energy supply cost risk mitigated due to multi-fuel purchase options.

COMMUNITY BENEFITS

• Reduced energy consumption equals increased investments into patient care.
• Decreased environmental impact improves the wellness of facilities and the community.

CHALLENGES AND LESSONS LEARNED

Initially, there was reluctance by the maintenance staff about the use of the new technology, and, while leadership was very supportive of the concept of a combined heat and power system, capital improvements like these still compete with other needed capital items for patient care such as MRIs and other clinical equipment.

However, once peers from other ProMedica facilities toured the installation and the staff saw the enthusiasm by their colleagues, they realized what a great system they had. In fact, due to the successful energy reduction, cost avoidance, and the ability to meet electricity and hot water demands, ProMedica is now considering combined heat and power systems for retrofits at other existing hospitals as an alternative to replacing boilers.

Similar systems have been installed at over 200 hospitals nationally with some having emergency power capabilities to improve resiliency and provide redundancy during power outages.

DEMOGRAPHICS

ProMedica Wildwood Orthopaedic and Spine Hospital (WOSH), a division of ProMedica Toledo Hospital, was built with patients in mind. The 70,000-square-foot facility is the region’s only free-standing hospital devoted exclusively to caring for orthopaedic and spine patients. The entire hospital was designed to provide a state-of-the-art environment that is customized to treat and rehabilitate adults with bone, joint and spine disorders and injuries.

As ProMedica’s first all-electronic hospital, WOSH features 36 private rooms with added amenities, including convenient room service; six integrated operating rooms; 24/7 in-house hospitalist care; pre-operative education sessions; a bloodless care program; pain management blocks and anesthesia rounding to aid post-op recovery; and inpatient physical therapy. The high quality of care provided at WOSH has been recognized by the 2014 Healthgrades Patient Safety Excellence Award™ and the Press Ganey Beacon of Excellence for Physician Engagement Award.
Learn More

Healthier Hospitals
www.healthierhospitals.org

Practice Greenhealth
www.practicegreenhealth.org

Health Care Without Harm
www.noharm.org

Ohio Hospital Association Energy and Sustainability Program
www.ohiohospitals.org/energy
Healthier Hospitals
Leaner Energy Challenge

From powering life-saving equipment to ensuring the comfort of patients and staff, twenty-four hours a day, seven days a week, energy is paramount to quality health care. However, with hospitals and health systems—the second most energy-intensive building sector in the United States—emitting 8% of the nation’s greenhouse gas emissions, it is imperative that hospitals cut emissions through improved operations and equipment maintenance efficiency. There is a need to track both efficiency, as measured by energy used per unit of service or size of hospital, and aggregate use.

Healthier Hospital’s Leaner Energy Challenge helps hospitals set off on that energy reduction journey. More than 80 Ohio hospitals have committed to the Leaner Energy Challenge.

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<td>Doctors Hospital Nelsonville</td>
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<td>Marion General Hospital</td>
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**LEVEL 1**

Reduce greenhouse gases by decreasing weather-adjusted energy intensity from metered energy use by 3% from baseline.

**LEVEL 2**

Reduce greenhouse gases by decreasing weather-adjusted energy intensity from metered energy use by 5% from baseline.

- Cleveland Clinic health system
- Cleveland Clinic main campus
- Euclid Hospital, a Cleveland Clinic hospital
- Fairfield Medical Center
- H.B. Magruder Memorial hospital
- Lakewood Hospital, a Cleveland Clinic hospital
- Lutheran Hospital, a Cleveland Clinic hospital
- Mercy Tiffin Hospital
- Ohio Health Grant Medical Center
- Southern Ohio Medical Center
- Summa Wadsworth Hospital
- UH Conneaut Medical Center
- UH Richmond Medical Center

**LEVEL 3**

Reduce greenhouse gases by decreasing weather-adjusted energy intensity from metered energy use by 10% from baseline; OR, if facility is already an ENERGY STAR rated facility (> 75), maintain ES status.

Congratulations to these Leaner Energy hospitals for achieving Levels 1-3!

- Adena Greenfield Medical Center
- Bluffton Hospital
- Fairview Hospital, a Cleveland Clinic hospital
- Good Samaritan - Premier
- Highland District Hospital
- Hillcrest Hospital, a Cleveland Clinic hospital
- Medina Hospital, a Cleveland Clinic hospital
- Mercy Medical Center
- Ohio Health Grady Memorial
- Summa St. Thomas
- Sycamore - Kettering Health Network
- Trinity Medical Center East
- UH Geneva Medical Center
- Wright Patterson Air Force Base Medical Center