

CHW's environmental vision powers successful energy conservation efforts

Turning off unneeded lights, installing efficient bulbs and lowering thermostats may be among the easiest energy saving methods hospitals employ today, but at Catholic Healthcare West (CHW), energy conservation is in its DNA.



Since embarking on its current environmental stewardship path in the mid 1990s, CHW has implemented a vast array of energy conservation initiatives that have made the huge multi-hospital healthcare system a model in the industry. Those efforts have paid off in a variety of ways, including dramatic percentage decreases in energy consumption – from over 1.5 million kilowatt hours of electricity and 400 million therms of natural gas in 2003 to approximately 1.4 million kilowatt hours and 389 million therms in 2007.

Those successful initiatives – many completed and still more underway – range from traditional operational energy efficiency programs, massive energy retrofit projects, building cogeneration plants to produce electricity and capture waste heat, as well as unique alternate energy projects using reclaimed landfill gas.

Raising the bar on energy conservation

CHW today, in fact, has become a standard by which most hospital systems could arguably be judged from an environmental standpoint: In addition to saving scores of kilowatt hours of electricity and therms of natural gas, CHW not only is monitoring and reducing its own greenhouse gas emissions but has successfully lobbied California fuel companies to reduce their own greenhouse gas emissions. The system participates in the California Climate Action Registry, a voluntary program that helps companies calculate and certify greenhouse gas emissions from a variety of sources, including vehicles, diesel generators, direct heating, cooling and electricity use. Once certified,



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2007 CHW annual report

data will be made public and goals will be set for reducing greenhouse gases in coming years. CHW was the first healthcare organization in California to participate in the Registry, and also has achieved 100 percent compliance in reporting greenhouse gas emissions attributed to carbon dioxide in the Registry’s online reporting tool.

CHW Woodland Healthcare, for example, reduced electric consumption by 780,000 kilowatt hours, reducing its greenhouse gas emissions by 360 metric tons of CO₂, equivalent to 70 cars averaging 25 miles per gallon and driving 15,000 miles per year. And at California Hospital Medical Center (Los Angeles), operational energy efficiency efforts have reduced CO₂ emissions by 870 metric tons, equivalent to 170 cars averaging 25 miles per gallon and driving 15,000 miles per year.

For these and other efforts, CHW and many of its more than 40 hospitals and care centers across California, Arizona and Nevada have been recognized and honored by a host of national organizations, including Practice Green Health and Health Care Without Harm, as well as a variety of state government and business entities.

Turning challenges into success

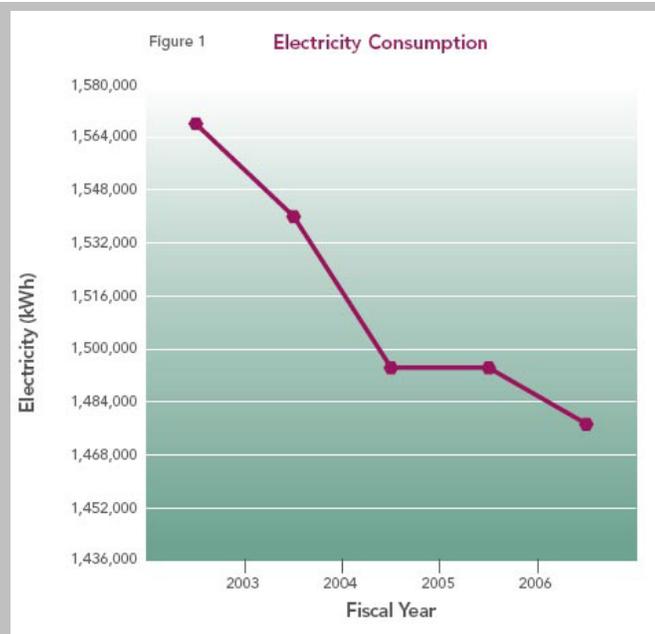
Like any hospital or system, CHW’s energy conservation efforts are sometimes challenged by such factors as variable patient loads, new clinical equipment with higher heat loads, physical plant equipment nearing the end of its useful life, and higher ventilation ratios to meet regulatory requirements. In addition, new construction over the coming decade will grow to unprecedented levels, challenging CHW with the need to meet regulatory requirements while continuing to serve the public’s healthcare needs. Add to that pressures from shareholders, whose concern over climate change have prompted CHW to seek assurance that

companies are preparing strategies for the geophysical, regulatory and litigation risks new construction projects pose. In 2008 alone, shareholder proposals asked companies to institute energy efficiency measures, report back to them on climate change strategies, reduce greenhouse gas emissions and develop renewable sources of energy.

The healthcare system's current energy conservation efforts took hold in January 1996, when the CHW board of directors endorsed the environmental stewardship principles of The Coalition for Environmentally Responsible Economies (or "Ceres," pronounced "series"), the leading coalition of investors, environmental groups, and other public interest organizations working with companies to address sustainability challenges such as global climate change. In endorsing the Ceres Principles, CHW agreed to conduct an internal environmental audit and complete an annual public report on environmental performance. CHW asserts that the Ceres endorsement positioned the system as a healthcare leader on environmental issues, and continues to do so today.

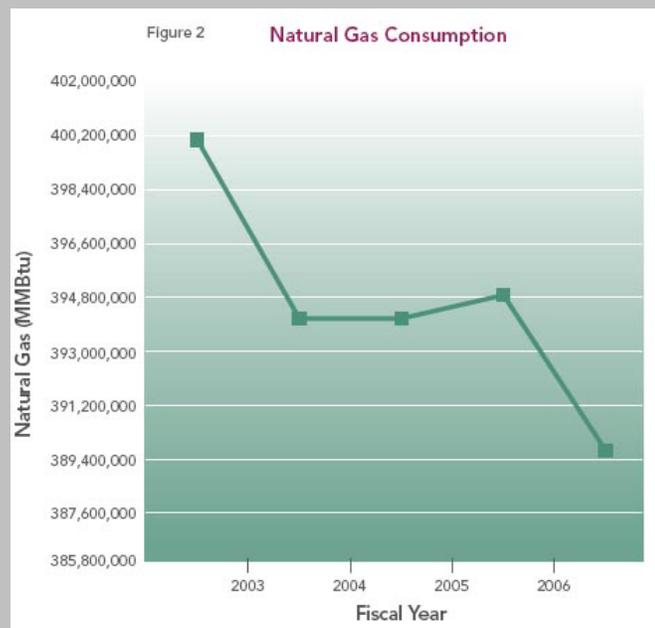
Energy vision part of Healthy Building Initiative

Several years ago, CHW recognized that to be truly comprehensive and successful, energy conservation needed to be



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Source: "Healing Our People...Our Planet: CHW's Environmental Commitment"



Figures 1 and 2 show our progress over the last five years in energy conservation, and we expect these figures to improve even more as our newer projects and re-designs come online.

an integral part of every renovation and new construction project undertaken at its facilities.

In its 2007 annual report, CHW noted, “The buildings we design and build fundamentally impact the lives of our patients, staff and public. We have an opportunity and an obligation to actively develop solutions and make use of global standards to make a positive impact on improving the built environment.”

And so was born the CHW Project Delivery Model’s “Healthy Building Initiative,” the system’s platform for sustainable design efforts, which set goals for reducing consumption of natural resources such as energy, water, land and materials, improving energy efficiency, reducing greenhouse gas emissions and incorporating energy efficiency and building and land sustainability in all construction projects.

Under the initiative, CHW requires that each facility create an environment conducive to healing in its design of internal and external space, use of art, gardens, music, private space and technology. Buildings also are to be designed to reduce patient safety incidents such as slips and falls, hospital acquired infections, and medication errors and to reduce employee safety incidents and improve working conditions and satisfaction.

CHW now requires its architects, engineers and contractors to specify appropriate, commercially available, cost-competitive, materials, products, technologies and processes that have a positive impact, or limit any negative impact, on environmental quality and human health. That may be a tall order, but the system believes the long-term payoff is rewarding.

A flurry of energy conservation projects

In 1999 and for every year since, CHW has performed energy audits and fluorescent lighting retrofits. But in October 2001, the healthcare system turned up the heat on energy conservation, embarking on a series of capital and operational energy retrofit programs. The program continues today as a continual effort to improve existing energy infrastructure and design new campuses to achieve energy efficiency. In 2007, CHW began certifying emissions data system-wide. Energy retrofit projects have been implemented at St. Joseph’s Hospital and Medical Center, Phoenix, AZ, Woodland (CA) Healthcare, Marian Medical Center, Santa Maria, CA and California Hospital Medical Center, Los Angeles. (See below.)

During the past five years, CHW has completed 15 major energy conservation projects and six co-generation projects, one landfill gas regeneration project and participated in five electric contracts where a minimum of 5 percent of the power requirements originate from green sources. CHW currently has four major energy conservation projects underway, one co-generation plant under construction and nearing completion and is investigating photovoltaic opportunities at several facilities. Combined annual energy savings from these projects alone is estimated at 23.8 million kilowatt hours of electricity and 1.8 million therms of natural gas – enough to operate 4,160 automobiles or power

and heat 2,200 single-family homes in one year. The projects also are projected to reduce carbon dioxide emissions by 21,375 metric tons per year.

CHW also has 12 operational energy efficiency programs in place and four additional programs under review. Operational energy programs are tailored toward increasing energy efficiency through improved control of energy consumption, and typically require limited capital dollars and involve operational changes of existing equipment including; enhanced control through building automation systems, improved control and distribution of heating, ventilation, and air conditioning, improvements to steam distribution system and steam traps, and staging of equipment to decrease electric demand and increase serviceable life of equipment.

Snapshots of success

In just seven short years, CHW has logged a large number of successful energy conservation projects at its hospitals – all aimed at reducing greenhouse gas emissions and becoming more energy efficient. Many of these efforts have enabled CHW to explore energy conservation in a variety of unique and novel ways. For example:

- *Renewable energy reclamation project* – In 2007, Marian Medical Center, Santa Maria, CA, worked with a local engineering firm and the city to pipe landfill gas from a municipal landfill 1.5 miles away to the hospital's 1.05 megawatt cogeneration plant. Today, the methane-powered plant, which came online in September 2007, produces 80 percent of the hospital's electric needs. The generation facility is maintaining a 96 percent uptime and producing approximately 7.2 million kilowatt hours of electricity, enough to power approximately 640 homes. CHW claims that the multi-year partnership between the hospital, landfill, and developer made both environmental and economic sense. Prior to starting the generation plant, methane gas was being flared at the local landfill, its heat content being lost and its carbon emissions entering the atmosphere. Equally attractive is the project's economics. This developer-funded project was structured as a power purchase agreement, meaning the cost of power under the agreement is less than from the local utility company across all time of use periods.
- *Energy co-generation projects* – CHW has successfully installed cogeneration plants to produce electricity and capture waste heat using more efficient heat rates. For example, St. Bernardine Medical Center, San Bernardino, CA, installed a 2.2 megawatt cogeneration plant that will produce both electrical and thermal energy and is nearing completion. An energy co-generation project at Marian Medical Center is expected to reduce CO₂ emissions by 2,630 metric tons, equivalent to 510 cars averaging 25 miles per gallon and driving 15,000 miles per year. Other co-generation plants are located at California Hospital Medical Center (Los Angeles), Saint Francis Memorial Hospital (San Francisco), St. Mary Medical Center (San Francisco), St. Joseph's Hospital, (Stockton, CA), Mercy Southwest Hospital, (Bakersfield, CA) and Bakersfield (CA) Memorial Hospital.
- *Energy retrofit projects* – CHW is actively involved in system wide capital and operational energy retrofit programs aimed at reducing current utility consumption,

shifting load to off peak periods and flattening the load profile during high demand time-of-use periods. CHW estimates that these programs alone will decrease overall electric consumption by 17 percent and cut natural gas consumption by 9 percent. The retrofit program will also significantly reduce greenhouse gas emissions through improved energy efficiency. For example, St. Joseph's Hospital and Medical Center, Phoenix, AZ, recently completed initial phases of an energy retrofit project that is reducing annual electric consumption by 4.5 million kilowatt hours and natural gas consumption by 740,000 therms, enough to power approximately 400 homes and heat 1,000 homes. The \$4.1 million project was structured as a performance contract guaranteeing minimum annual savings of \$994,000.

Note: Information for these articles was taken from the following CHW reports:

- "Catholic Healthcare West shows its commitment to mission with "go green" efforts" July 2, 2008; CHW press release
- "Healing Our People...Our Planet: CHW's Environmental Commitment"
- "Service to our community" 2007 annual report from St. Bernardine Medical Center
- "An Enduring Mission: Social Responsibility Report (Fiscal 2007)
- "CHW Receives National Recognition for Healthy Environmental Practices"; May 2008 press release from CHW web site

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