



Reduce Your Facility's Energy Use (Operations)

The health care sector consumes a massive amount of energy and is responsible for 8% of greenhouse gas emissions in the United States.¹ Cutting your office or facility's energy use or switching to renewable energy can reduce emissions from fossil fuel electricity generation and air pollution associated with fuel transportation. Air pollution can contribute to asthma and chronic lung disease, among other health problems.

Health Care Without Harm and Practice Greenhealthⁱⁱ recommend the following interventions:

- **Make buildings more energy efficient** – *Facilities can reduce their energy use by switching to energy efficient light bulbs (CFLs, LED bulbs), adjusting thermostats to save energy when appropriate, and upgrading major equipment to the most energy-efficient model.* Optimize the building envelope with better insulation and energy-efficient windows. If your facility has on-site power generation, consider installing combined heat and power (CHP) technology, which captures excess heat from electricity generation and uses it for space heating and cooling and heating water.^{iii,iv} CHP systems can also operate during grid power failures, ensuring facility resiliency during storms or other events.
- **Install On-Site Renewable Energy Capability** - *Facilities can install solar panels to generate a portion of facility's energy, and/or solar hot-water heating system.* Kaiser Permanente has installed solar panels at facilities throughout California, equal to 70MW of solar capacity.^v
- **Purchase Energy-Efficient Products** – *Buy Energy Star or Federal Energy Management Program-designated products.* Medical devices, such as LED microscopes and direct-current vaccine storage refrigerators can also be solar powered.^{vi} CRT computer monitors can be replaced with LCD flat-screen monitors that use significantly less energy and laptop computers use less energy than desktop computers.^{vii}
- **Reduce Standby Energy Use** – *Plug computers and other electronic equipment into power strips and turn off when not in use.* According to the U.S. Department of Energy, plugged-in electrical equipment may consume energy even when it's powered down. Standby power (or "phantom" loads) can consume up to 5 percent of an electrical plug load.^{vii}
- **Purchase Green Power** – *Use power generated from renewable sources like wind, solar.* In 2015, Kaiser Permanente announced it would purchase 153 MW of wind and solar power in an effort to achieve its goal of reducing greenhouse gas emissions by 30 percent below 2008 levels by 2020.^{viii} Physician offices may be able to purchase renewable energy credits and buy renewable energy from their utility company in addition to installing on-site renewable energy systems.^{ix}

Case Study: Boston Green Ribbon Commission Health Care Working Group

- Twenty-two Boston-area hospitals participate in the project. The Commission's goal is to achieve a 25% drop in greenhouse gas (GHG) emissions by 2020 and 80% by 2050.
- Member hospitals achieved cuts in electricity, natural gas use, GHG reductions for all fuels.
- Sector energy use dropped by 6% from 2011-2013, "equal to eliminating GHG impact of an average care traveling over 85 million miles."
- Mass General Hospital cut GHG emissions by 35% in 2014, Boston Medical on track for a 45% cut in 2020, Brigham & Women's will reach 35% in 2020.
- **"Cost savings are conservatively estimated at \$11.9 million, enough to pay for healthcare for 1,055 Massachusetts Medicare enrollees."**^x

Resources

U.S. Department of Energy Commercial Building Energy Alliance/Hospital Energy Alliance
<http://www1.eere.energy.gov/buildings/alliances/>

My Green Doctor. Workbook – Energy Efficiency. <http://www.mygreendoctor.org/workbook-1-energy-efficiency/>

Energy Star Certified Products. <https://www.energystar.gov/products>

EnergyStar Guidelines for Energy Management: <https://www.energystar.gov/buildings/about-us/how-can-we-help-you/build-energy-program/guidelines>

EPA Combine Heat and Power Project: <https://www.epa.gov/chp>

U.S. Department of Energy. Hospitals Pulling the Plug on Energy-Wasting Electric Equipment and Procedures. <http://www.aep.uci.edu/der/buildingintegration/2/BuildingTemplates/Hospital.aspx>

U.S. Department of Energy. Federal Energy Management Program.
<http://energy.gov/eere/femp/federal-energy-management-program>

ⁱ Chung JW and Meltzer DO. Estimate of the carbon footprint of the US health care sector. *JAMA*. 2009;302(18):1970-2. Accessed at <http://jama.jamanetwork.com/article.aspx?articleid=184856>

ⁱⁱ Health Care Without Harm and Practice GreenHealth. Addressing Climate Change in the Health Care Setting: Opportunities for Action. Accessed at <https://practicegreenhealth.org/pubs/toolkit/reports/ClimateChange.pdf>

ⁱⁱⁱ U.S. Environmental Protection Agency. Combined Heat and Power Partnership: What is CHP? December 10, 2015. Accessed at <https://www.epa.gov/chp/what-chp>

^{iv} Grens K. Combined heat and power systems save money, reduce energy dependence, but regulations can unplug hospitals' plans. *Modern Healthcare*. September 7, 2013. Accessed at <http://www.modernhealthcare.com/article/20130907/MAGAZINE/309079851>

^v Kaiser Permanente. Kaiser Permanente's Commitment to Renewable Energy. Accessed at <http://share.kaiserpermanente.org/wp-content/uploads/2015/02/Kaiser-Permanente-Sustainable-Energy-Infographic-Feb-2015.pdf>

^{vi} World Health Organization. Health in the green economy: Co-benefits to health of climate change mitigation. Accessed at http://www.who.int/hia/hgebrief_health.pdf

^{vii} US Department of Energy. Hospitals Pulling the Plug on Energy-Wasting Electric Equipment and Procedures. July 2011. Accessed at <http://www.a pep.uci.edu/der/buildingintegration/2/BuildingTemplates/Hospital.aspx>

^{viii} Kelly I. Kaiser Permanente buys 153 MW of wind and solar power. RMI Outlet. April 1, 2015. Accessed at http://blog.rmi.org/blog_2015_4_1_kaiser_permanente_buys_153_mw_of_wind_and_solar_power

^{ix} My Green Doctor. Workbook 2: Renewable Energy. My Green Doctor Website. Accessed at <http://www.mygreendoctor.org/workbook-2-introduction/>

^x Boston Green Ribbon Commission. Health Care Working Group. Accessed at <http://www.greenribboncommission.org/work/health-care-working-group/>