

FACT SHEET



PG&E's Retrocommissioning Program for Hospitals

PG&E's energy management solutions can help you save up to 15% annually on your energy bill by building energy efficiency and demand response capabilities into your facilities. We can analyze your current energy usage, help plan energy savings projects, and provide project incentives and training.



WHAT IS RETROCOMMISSIONING?

Pacific Gas and Electric Company (PG&E) offers a comprehensive Retrocommissioning (RCx) program that can be an effective approach to improving an existing building's energy efficiency. When a building's usage has changed and the systems no longer serve the operational needs, or when energy management equipment and systems have not been maintained to their optimal condition, RCx can help. RCx differs from retrofit in that it focuses on optimizing the performance of existing equipment rather than on installing new equipment. Studies have shown that RCx can deliver average annual energy savings of 5-15 percent.

RETROCOMMISSIONING IN HOSPITALS

RCx is a particularly good option for hospitals. In many cases, replacing equipment in hospitals requires review and oversight by Office of Statewide Health Planning and Development (OSHPD), which can make energy efficiency projects cost prohibitive. Under RCx, chiller optimization and economizer repair—two top recommended measures—can typically move forward without OSHPD oversight, which means quicker installation and shorter time to payback. PG&E can help by providing engineering resources to identify potential energy savings from RCx measures and by offering incentives based on achieved energy savings.

CHILLER STAGING OPTIMIZATION

Hospital central plants typically consist of several chillers that are staged manually or through a programmed sequence to provide cooling to the hospital as needed. Chiller efficiency depends on several factors including size, type, and age. The units operate best when they are close to fully loaded.

Chiller optimization can be daunting for facility staff, who may not have the monitoring capabilities, technical resources, or time to perform a complete analysis of the programming, manual staging, and limitations of the facility.

PG&E's RCx program helps hospitals investigate and document chiller performance in order to identify inefficiencies and develop an optimization strategy. Often, existing equipment can perform significantly better with updated programming and new staging methodology based on load, efficiency, and automation potential

ENERGY SAVINGS AND IMPLEMENTATION COSTS.

With proper implementation, chiller optimization can provide improved system cooling and more stable performance along with significant energy savings. Implementation costs for chiller optimization are typically a fraction of the cost of replacing units, especially with program incentives that may be available through PG&E. The chart below illustrates the potential costs and energy savings for a chiller optimization project.

EXAMPLES OF COMPLETED CHILLER STAGING PROJECTS

Example Hospital	Electric Savings (kWh)	Natural Gas Savings (therms)	Cost Savings	Implementation Costs	Simple Pay Back (months)
Hospital 1	221,908	0	\$22,857	\$25,800	13
Hospital 2	635,520	4,058	\$68,705	\$20,000	4



ECONOMIZER REPAIR

Economizers use outside air to cool a building when the ambient temperature is lower than the cooling system air temperature. This “free cooling” saves electric energy used to run the building’s air conditioning system. PG&E’s healthcare-focused RCx programs take into account specific patient care-related limitations on using outside air.

PG&E can help hospitals identify the reasons for non-optimal economizer operation which may include:

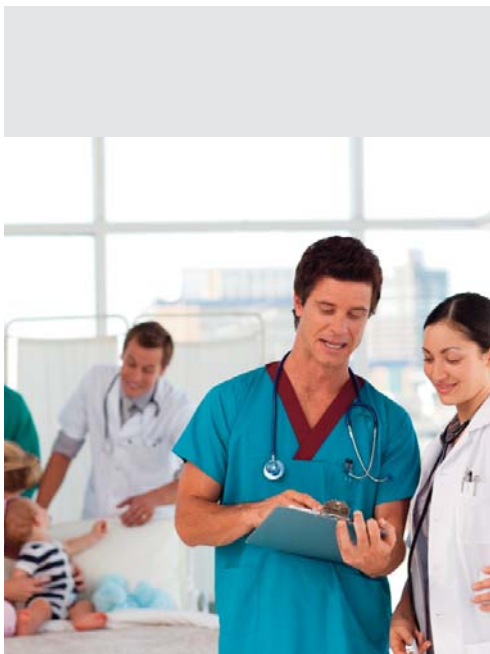
- Old equipment that is not operable due to rust and corrosion
- Incorrect damper specification, like an oversized outside air damper or one set at low air flow rates, allowing too much air to enter the building in both cooling and heating modes
- Incorrect installation
- Incorrect linkage adjustment and lubrication
- Temperature sensors out of calibration
- Incorrect damper orientation
- Leaky return air dampers
- Incorrect set-points, lockout settings, or other programming problems

Economizer function can be improved by software verification, sensor calibration, hardware modifications, and testing and adjustment of the supply fan, return fan, and exhaust fan flow rates.

A fully functioning economizer saves energy consumption and costs by decreasing the cooling load when the outside air is cooler than air inside the facility and decreasing the heating load during the cold season by using outside air to modulate temperature without operating the chiller. Improving economizer performance may even improve indoor air quality.

ENERGY SAVINGS AND IMPLEMENTATION COSTS

Installation costs for economizer repair tends to be less than a one year payback without incentives. The table below shows the potential costs and energy savings of economizer optimization.



EXAMPLES OF COMPLETED ECONOMIZER AND REPAIR PROJECTS

Example Hospital	Electric Savings (kWh)	Natural Gas Savings (therms)	Cost Savings	Implementation Costs	Simple Pay Back (months)
Hospital 1	93,574	0	\$9,638	\$11,200	14.4
Hospital 2	168,572	33,135	\$53,646	\$35,055	8.4
Hospital 3	55,538	9,652	\$17,338	\$19,475	13.4

NEXT STEPS

To learn more about Retrocommissioning and obtain a screening application, contact PG&E’s **Business Customer Center** at **1-800-468-4743**, or visit www.pge.com/rcx.

