



Reliable Energy for University Retirement Community At Davis

CHP • Power Quality & Reliability

Combined Heat & Power

Is All About Energy Savings
Energy Security
Energy Reliability



THE ISSUE:

Offset high-cost of electricity while enjoying the benefits of heating the swimming pool, spa, and domestic hot water from clean natural gas.

THE SOLUTION:

The Hess Microgen system uses Combined Heat & Power (CHP) to heat water while generating a valuable byproduct—electricity.

SOLUTION SUCCESSES:

- High reliability and system compatibility proven for hospital operations
- Hot water availability boosted 20% via innovative a CHP installation
- Electricity produced is a byproduct from heating domestic hot water and swimming pool/spa
- More than 9,000 hours of combined operation
- CHP electrical generation ensures vital Retirement Community operations remain up and running 24 hours a day, 7 days a week

University Retirement Community at Davis

Built in 2000, URCAD is an upscale 277 unit retirement community located at 1515 Shasta Drive in the college community of Davis, California.

This is an award winning, non-profit full service community, which has such amenities as a heated spa, swimming pool, laundry facilities, delicatessen, dining room (600 meals/day), and an onsite 51-bed Healthcare Center. The swimming pool remains at a comfortable 82° F for year round swimming while tenants can relax in the spa set at 100° F.

Quick Facts:

Equipment:

Two - 200 kW Hess Microgen
Mark IV Controller
Alfa Laval Heat Exchanger
Beaird Industries—Maxim Silencer

Electrical Output: 400 kW

Total kWh Generated:
Over 1,500,000 kWh

Heat Rate: 9,780

Peak Connected Load:
768 kW

Heat Recovery:

978,000 Btu/hr/module, or 1,956,000 Btu/hr total output (maximum thermal load demand)

Installation Purpose:

- To heat swimming pool/spa, Domestic Hot Water, space heating, and heat underground parking garage
- To generate 75 – 85% electricity for onsite use
- To help harness energy future by controlling operational costs



GOLDEN STATE ENERGY



Think Outside the Grid

Combined Heat & Power

Comparison—Grid Power vs. Combined Heat & Power

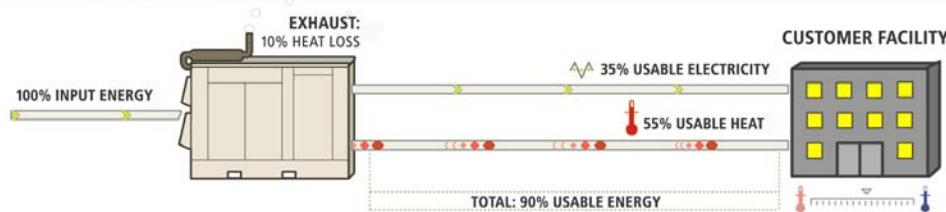
Grid power is generated with a lower efficiency generation cycle. Sometimes hundreds or thousands of miles from your facility, it has inherent losses in delivering the electricity to you. You pay for these inefficiencies in the utility's generation, transmission, and operational management structure. CHP is the most efficient generation cycles, which insulates your operation from the utility distribution losses, operational inefficiencies, and blackouts. Companies that install onsite cogeneration systems are always able to produce power for less than the electric utility....regardless of the gas price.



TRADITIONAL CENTRAL UTILITY



ONSITE COGENERATION



Benefits

Under Golden State Energy's (GSE) unique Third Party Ownership Structure, you will improve your bottom line with substantial savings in electrical, steam, chilling and natural gas expense—totaling as much as 25% annually. GSE assumes the plant design, ownership, operation, performance, fuel supply, permitting, regulatory, and financial risk. Outsourcing, allows you to focus on your core business. Other benefits include:

- **No capital investment** is required for the installation of onsite power generation
- The Customer purchases **discounted power** and thermal as an outsourced commodity
- Customer has **no risk** for operation, performance, maintenance, or replacement
- Improves reliability & insulates your operation from power outages and price increases

URCAD Quick Facts:

Installed Cost:
\$710,745.00

California Self Generation
Incentive Rebate:
Level 3 - \$213,333.00

Annual Savings:
\$174,260.00

Actual Payback:
2.86 Years

Operation Since:
August, 2003

URCAD Building Size:
444,927 Square Feet

Swimming Pool Size:
1,250 Square Feet

Emergency Generator:
Onan 500 kW Diesel

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