



# FACT SHEET

## Elgin Community College Building Cooling, Heating, and Power (CHP) Plant

### Site Description

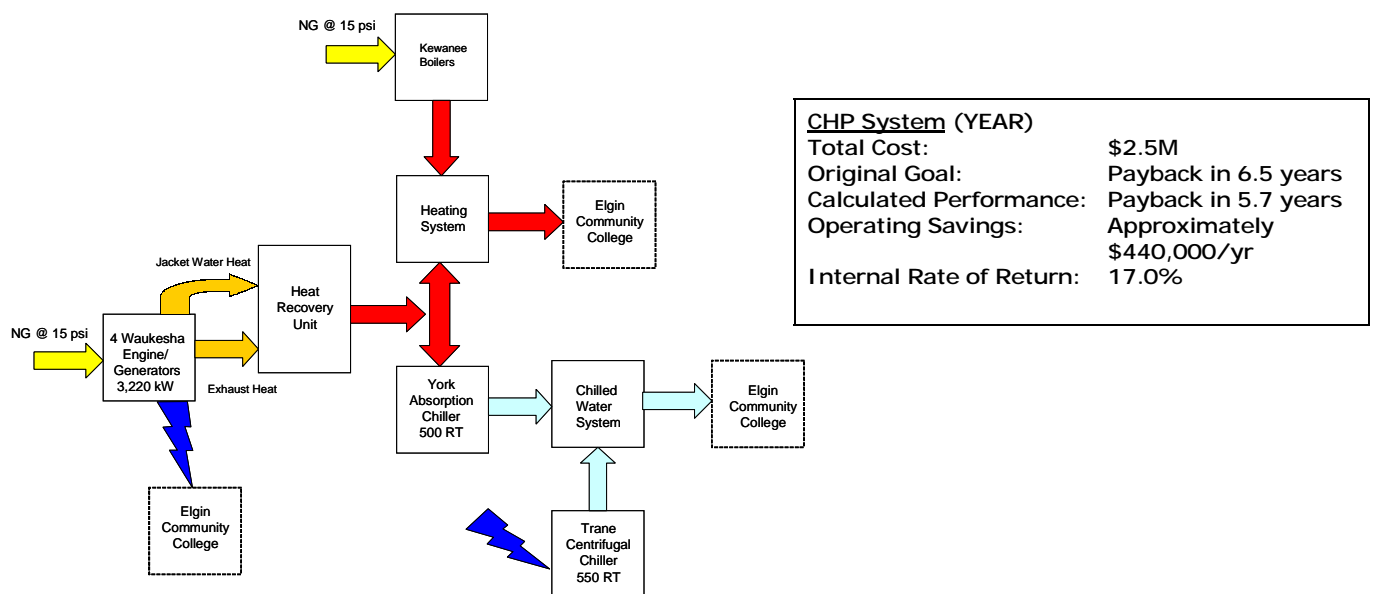
Elgin Community College, located in Elgin, Illinois, a northwest suburb of Chicago, provides education to the residents of Cook and Kane Counties. The main campus consists of 12 buildings on over 145 acres, totaling 672,235 square feet of floor space. With a student population of 25,000 and expected to grow to 50,000 by 2020, the college has been looking towards efficient and energy saving technologies to serve their future needs utilizing the concepts of cogeneration.

In 1996, a 3.2 MWe Buildings, Cooling, Heating, and Power (CHP) Plant was installed at the main campus of Elgin Community College to provide: 1) energy reliability; 2) energy savings and; 3) on-site energy control. The load following cogeneration system operates during the local electric utility's on-peak energy period between 9 AM and 10 PM weekdays, excluding holidays. This schedule enables ECC to avoid the high on-peak electric energy and demand rates.

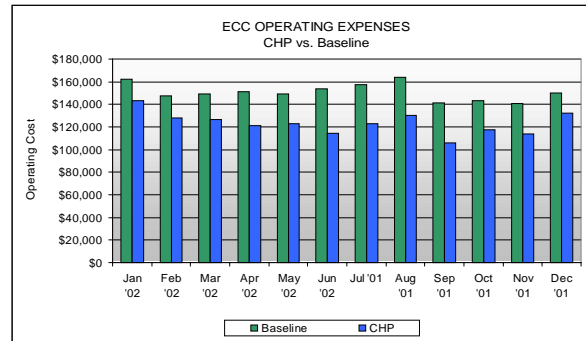
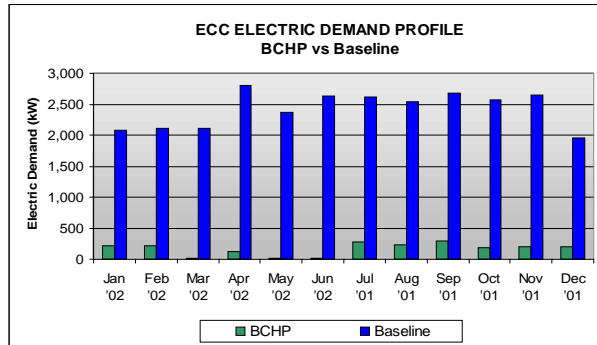
University and college facilities are generally good candidates for CHP applications because they have extended hours of operation, they operate during the entire year, and probably most importantly, they are often heated and cooled by central district heating and cooling plants. The CHP Plant covers 11 buildings totaling 618,715 square feet and at full capacity the CHP Plant at Elgin Community College is capable of recovering 11.3 MMBtu/hr of waste heat and producing 11,340 lb/hr of steam.

The Elgin Community College Maintenance and Operations Staff plans to install an additional engine and absorption chiller in the near future to operate the entire main campus with cogeneration covering over 50% of the cooling load.

### Cooling, Heating, and Power for Buildings (CHP) Configuration

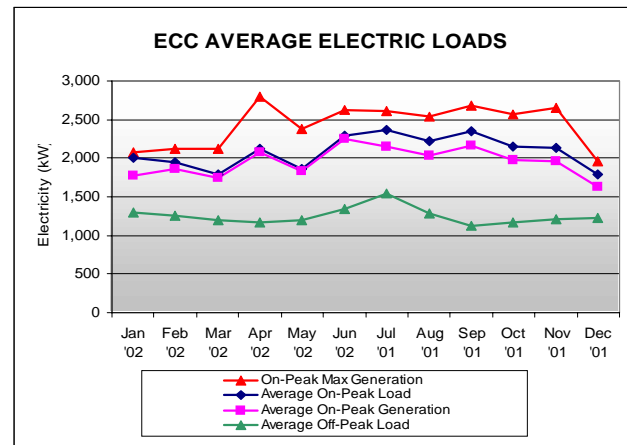


## Energy/Financial Statistics



ANNUAL OPERATING EXPENSES		
	Baseline	BCHP
Electricity	\$989,285	\$264,910
Natural Gas		
Boilers	\$561,512	\$394,527
Engines	\$0	\$374,269
Maintenance		
(1.2¢/kWh)	\$0	\$79,050
<b>Total Expenses</b>	<b>\$1,552,778</b>	<b>\$1,112,756</b>
<b>Annual Savings</b>		<b>\$440,023</b>
<b>Monthly Savings</b>		<b>\$36,669</b>

Financial Comparison Baseline and CHP Plant  
52¢/therm of natural gas



### Additional Considerations

Elgin Community College is required to be a Federal Emergency Management Agency (FEMA) shelter in times of emergency. The CHP Plant insures that the college shelter will be fully functional with electricity should an emergency occur.

Funding by the Illinois Community College Board (ICCB), credits from previous projects, plus the CHP Plant incorporated into a larger building project brought the actual cost of the CHP Plant under \$1.5 million.

The CHP Plant only produces 4.106 tons of emissions, well under the allowable limit of 35.93 tons.

The ECC campus is shut down on Fridays during the summer months. These Fridays are optimal days for maintenance and repairs.

For further information contact:



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