

The Detroit Thermal VOICE

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DETROIT THERMAL, LLC IS A THERMAL VENTURES II, LP COMPANY

Do-it-yourself steam often costs more than Detroit Thermal service

Editors' Note: The spring issue of The Detroit Thermal Voice discussed the complexities of self-generation. As a follow-up to that story, this issue features a case study illustrating the true cost of self-generation.

At first blush the owners of a major Detroit office building thought they would save money by installing boilers to generate steam for the building's heat and hot water.

A closer look showed that the actual costs of installing and running a boiler greatly exceeded the cost of Detroit Thermal steam service.

"There is the capital and the cost of capital to consider, along with a variety of additional factors such as operating and maintenance expenses, insurance, even water and chemicals that are easy to overlook when architects or building managers consider installing boilers for steam self-generation," said Phil Marsalese, Detroit Thermal director of marketing. "These factors significantly affect the cost of heat and hot water and can have a huge impact on the bottom line."

Detailed analyses of the building's needs revealed a true picture of ongoing as well as one-time

expenses and provided a case study in determining the true cost of energy alternatives.

BUILDING BUILT FOR STEAM

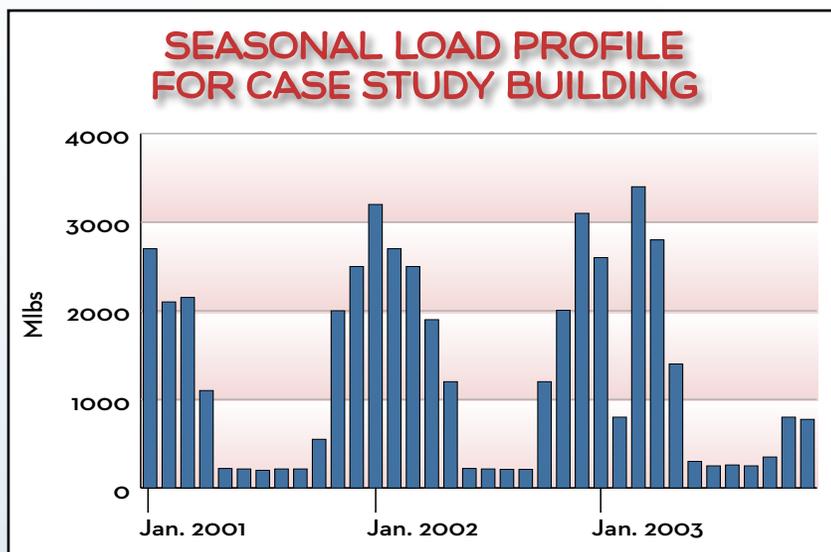
The building, a classic 11-story structure, houses nearly 274,000 square feet of rentable space. Most of the space is configured for offices, some is devoted to retail and restaurant uses.

Built in the late 1920s, the building was designed to be heated by district steam. Its pipes and traps work well, and building managers are pleased with the reliability and ease of Detroit Thermal steam service. Still, a recent cost-cutting initiative spurred the managers into looking at self-generation.

To help building representatives take all the relevant factors into account, Detroit Thermal prepared an energy needs assessment that spelled out the building's annual energy requirements.

"The study begins with the fundamental elements: square footage, annual thermal energy requirements and peak demand history," explained Mark Butta, vice president of business development for Thermal Ventures II, Detroit Thermal's parent company. "In this case the building used 18,000 Mlbs (thousand pounds) per year, but what's more important is that peak demand was 12,100 pounds per hour."

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Butta explained that while peak demand occurs only on the coldest days of the year, the boilers have to have the capacity to meet that demand. “The on-site boilers have to have the capacity to keep the building warm during the coldest weather,” he said. “The rest of the time, in fact most of the time, they operate at less than peak demand – and that means at less than peak efficiency.”

Boiler companies often cite operating efficiency statistics at peak demand levels under ideal conditions because that is when boilers operate most efficiently. However, for the building in the case study, the annual operating boiler efficiency was actually 60 to 68 percent.

CAPITAL COSTS REFLECT PEAK DEMAND

A second analysis detailed the cost components of a self-generation system. Basic capital costs amounted to \$820,000.

SELF-GENERATION BASE COST COMPONENTS

Capital costs	\$ 820,000
Operation & Maintenance	228,200
Administration	60,000
Energy (per year)	197,000
Other (water, sewer, water treatment, insurance)	<u>33,000</u>
Net \$/Mlb to self-generate . . .	<u>\$ 39.86</u>
Detroit Thermal net \$/Mlb . . .	<u>\$ 19.89</u>

“The original capital costs are mostly a function of the horsepower needed to reach peak demand, but they also include boilers, pumps and electrical circuitry,” Marsalese said. In this case the system would require 600 boiler horsepower. The capital cost estimate did not include new or additional pipes inside the building. If the building were converted to a hot water system, the existing steam pipes would have to be removed and new piping installed throughout the building.

ESTIMATE OF ONGOING EXPENSES

Ongoing expenses also have to be reckoned. These include the cost of natural gas and electricity, estimated at \$197,000 a year, and the cost of operating and maintaining the system, which would run more than \$228,000 annually. “Someone has to make sure the water treatment is handled appropriately, take care of routine maintenance and operate the boiler,” Marsalese said.

City regulations require that certain size boilers be attended by a licensed boiler operator, which can significantly impact the cost of operating an on-site system.

Water, water treatment, sewer, administrative costs, even additional insurance premiums are

ongoing expenses that must be part of the equation.

“Insurance companies generally consider a gas-fired boiler on the property a liability,” Butta said. “Sometimes they will issue a rider to an existing policy; other times they require that the boiler have its own policy.”

Detroit Thermal’s detailed analysis found that in this case, the net cost per Mlb to self-generate steam would be \$39.86 (assuming that the capital costs are amortized over seven years and that debt service is 6 percent).

This building, like most Detroit Thermal customers, currently pays \$19.89 per Mlb, the rate Detroit Thermal “inherited” when it purchased the steam system from DTE Energy. In a rate case that Detroit Thermal has pending with the Michigan Public Service Commission, a base rate of \$17.94 is proposed. This base rate does not reflect fuel cost recovery charge, which will be established by the MPSC ruling.

Good decisions are based on solid information, Butta said, and when the decision involves energy options, the information should include the hidden as well as the obvious factors that contribute to cost, efficiency and reliability. ■

THE DETROIT THERMAL ADVANTAGES

Low-cost steam is only one of the many advantages steam service from Detroit Thermal offers over self-owned and -operated boilers:

- 💧 More cost-effective steam.
- 💧 Increased reliability.
- 💧 Fewer operating responsibilities.
- 💧 Fuel diversification.
- 💧 Access to expert assistance.
- 💧 Economies of scale.

For more information, contact your Detroit Thermal account executive at 313-963-3844.

Good Detroit Thermal service helps ensure Detroit eatery's good customer service

The Checker Bar & Grill is a landmark in downtown Detroit. It is famous for its hamburgers and was named the restaurant with the "Best Burgers in Detroit" by local subscribers of AOL.

The popular eatery, located on Cadillac Square, has been owned and operated by the Munro family for more than 50 years. Sisters Karen and Kathy Munro, who now run the restaurant, focus on maintaining its reputation for friendly service as well as good food ... and the attention the Munro sisters pay to their customers helped them appreciate the service they received recently from Detroit Thermal.

Kathy Munro called Detroit Thermal to inquire about high steam bills. An investigation found that some of the equipment in the 100-year-old building that houses the restaurant was not working properly.

PROBLEMS FOUND AND FIXED

"Our investigation showed that the customer's equipment was not operating efficiently and needed repair," said Dave Carman, Detroit Thermal customer service supervisor. "There were problems with the steam traps and with the pump on the heat exchanger, which our technicians were able to correct."

Detroit Thermal is responsible for the steam system up to the point where it enters the customer's premises. From there on, the equipment is customer-owned and the customer is responsible for its care and repair. Many customers, such as Kathy and Karen Munro, are pleased to be able

to contract with Detroit Thermal for a variety of maintenance and repair services.

"Detroit Thermal responded to our call immediately," Kathy Munro said. "That was critical to us because we use steam for both heat and hot water and we can't run our business without them."

INNOVATIVE SOLUTIONS

The Detroit Thermal team identified the problems and devised a repair schedule that doesn't interfere with the restaurant's lunch business. "They paid attention to our needs. They helped us come up with innovative, cost-effective solutions to the problems, and they were very thorough," Kathy Munro said.

So thorough, in fact, that when they started working on the steam system and found water leaking into the basement from the first floor, they investigated until they found the source of the problem – a misplaced ice-maker tube.

Carman says Detroit Thermal's emphasis on customer service is one of the factors that will help the company grow and prosper.

"We know how important it is to build good relationships with our customers," he said. "All our customers – large facilities and small businesses alike – can rely on Detroit Thermal for the service they need." ■

MAINTENANCE/REPAIR SERVICES

Detroit Thermal steam technicians can help customers maintain or repair their steam systems. Detroit Thermal offers the following services:

- Seasonal shutoff and restart of steam service.
- Steam trap repair and/or replacement.
- Inspection and repair of pressure-reducing valves (PRV) and PRV pilot valves.
- Steam valve replacement.
- Repair of condensate and steam leaks.
- Condensate hardness tests.
- Steam trap surveys.
- Review of steam usage and steam-saving recommendations.

For more information, call 313-963-3844.



External factors fuel sharp price fluctuations

High demand caused by unusually cold weather or variations in domestic storage inventories are typical contributors to peaks and valleys in natural gas prices. However, this year normal price fluctuations have been exacerbated by a number of unusual circumstances.

“The price of crude oil has skyrocketed, and that has an impact on other energy resources,” said Mark Butta, vice president of business development for Thermal Ventures II, which owns Detroit Thermal LLC. Crude oil is the basic component of heating oil, and as its cost has increased, so has the cost of heating oil. That in turn has put pressure on natural gas prices as customers that have the ability to use either fuel switch to natural gas.

This fall’s unusually damaging succession of hurricanes in oil- and

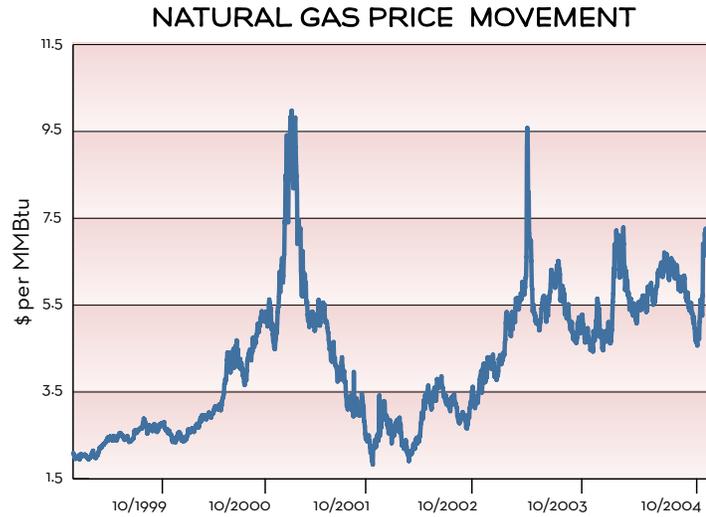
gas-producing areas also helped drive up the cost of natural gas. “Production and distribution were disrupted by the storms, and extended power outages slowed the return to normal,” Butta said.

“But a new factor – speculative buying and selling – is having an impact,” he continued. “Shifts in financial markets have encouraged some financial fund managers to jump out of equities and into other volatile markets, particularly energy futures. Their speculation increases the volatility in the market and the vulnerability of some consumers.”

Detroit Thermal manages volatile prices by constantly monitoring natural gas prices and making purchases that limit the company’s risks. Detroit Thermal also uses steam generated by municipal waste at

the Greater Detroit Resource Recovery Authority plant.

Some Detroit Thermal customers could see higher steam costs this winter because their variable steam rates are tied to the price of natural gas. ■



Thermal Ventures II, LP
District Energy Systems
Akron Thermal Cooling, LLC
Detroit Thermal, LLC
Hohenwald Thermal, LLC
Martinsville Thermal, LLC
Youngstown Thermal, LLC

Detroit Thermal, LLC
541 Madison Avenue
Detroit, Michigan 48226
Phone 313.963.3844
Fax 313.963.7285