



EcoThermal Filters

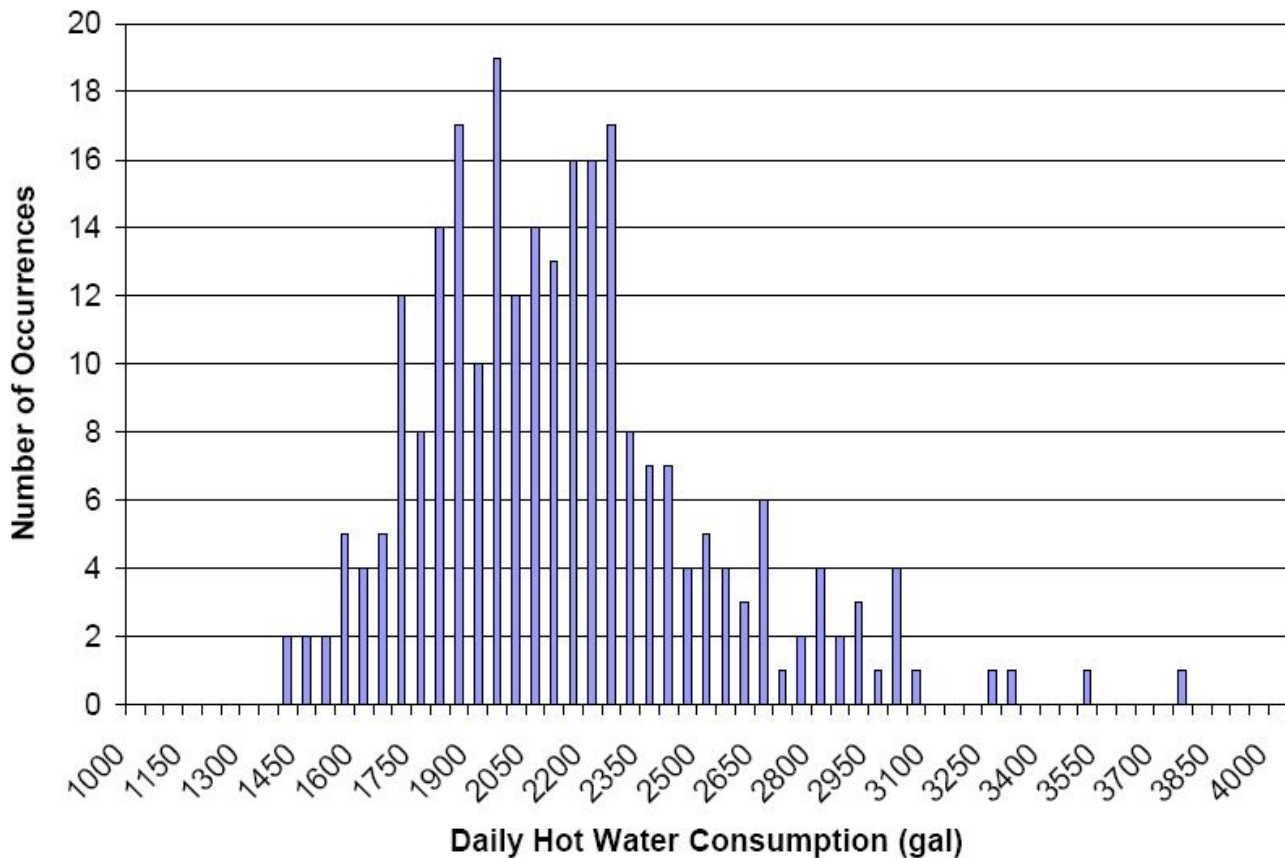
Heat Recovery Technology
for Commercial Kitchens

Energy Efficient · Sustainable · Practical





Restaurants use about five to seven times more energy per square foot than other commercial buildings.

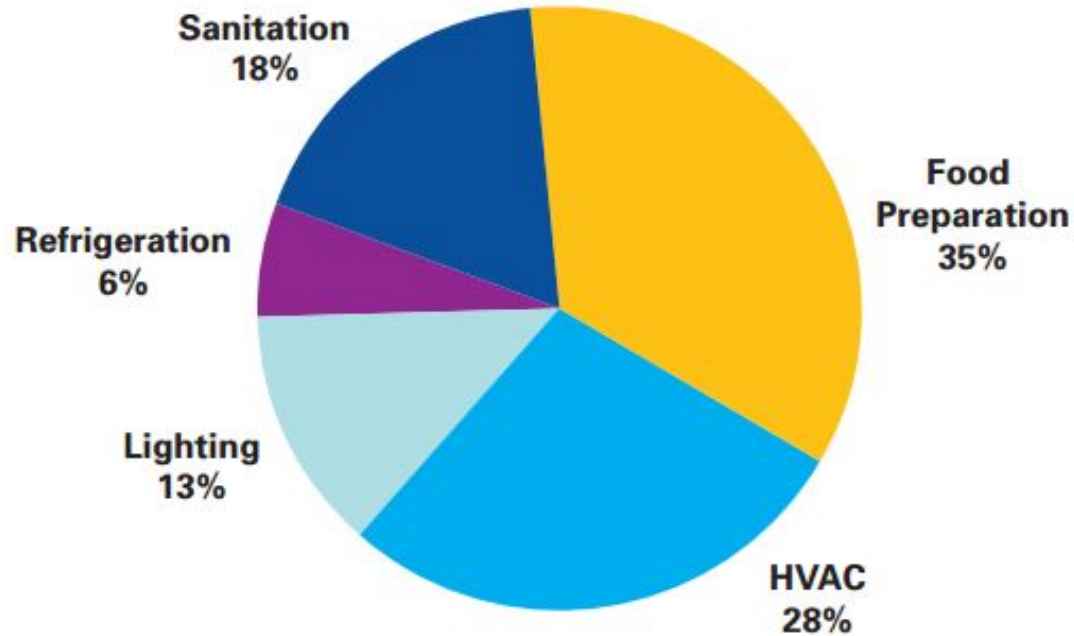


Medium sized, full service restaurants use 2,000+ gallons of hot water every day.



Energy efficiency is gaining steam, according to the National Restaurant Association's 2013 Restaurant Industry Forecast. A majority of operators, nearly 80% of family-dining and fast-casual operators, invested in energy-saving light fixtures in 2012, and between 52% and 75% plan to do so in 2013. About 50% invested in energy-saving kitchen equipment, with 55%-71% planning to do so in 2013. Also in 2013, about half of operators expect to invest in energy-efficient refrigeration, air conditioning or heating systems.

**Example of the Average Energy
Consumption in a Full-Service Restaurant**
(British Thermal Units [Btu])



Hot water production is a significant portion of a restaurant's gas load



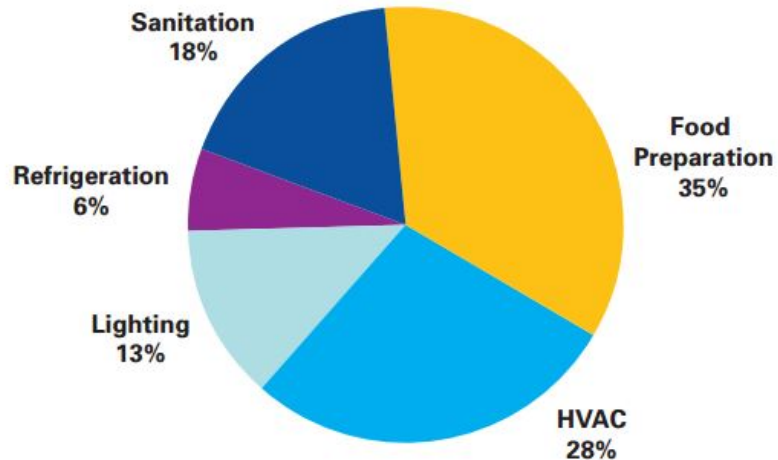
In one study, EcoThermal Filters provided 70% of the restaurant's hot water needs during peak operating hours and provided 55% of the daily hot water needs.

EcoThermal Filters

- Grease filter with an imbedded heat exchanger
- Captures waste heat from the cook line
- Free hot water for dishwashing, clean up and prep

EcoThermal Filters save energy

Example of the Average Energy Consumption in a Full-Service Restaurant
(British Thermal Units [Btu])



In this chart, published by Energy Star, hot water use (sanitation) is estimated at 36% of cooking (food prep). When examining the natural gas bills of a restaurant, the summer month's usage is the best indicator of cooking and hot water use. The summer months will not have any natural gas space heating. We have three samples of gas bills:

- Anejo Mexican Bistro-1,327 Therms (Aug 2013)
- Chillis West Bridgewater Ma-1,287 Therms (Aug 2010)
- Denny's in Miami-1,760 Therms per month (Avg)

Heat recovery filters supplied 55% of the hot water needed, the calculation to determine annual gas savings is:

$$\text{Monthly Therms} \times 36\% \times 55\% \times 12$$

For the example restaurants:

- Anejo Mexican Bistro $1,327 \times 36\% \times 55\% \times 12 = 3,153$ Therms
- Chillis West Bridgewater Ma $1,287 \times 36\% \times 55\% \times 12 = 3,058$ Therms
- Denny's in Miami (24 hour) $1,760 \times 36\% \times 55\% \times 12 = 4,182$ Therms

To calculate the financial savings: Annual Therms saved x (price of Therm/system efficiency).
We can estimate the Therm value at \$1.20 and the standard hot water heater efficiency at 75% (on demand systems use 95%). The estimated financial savings for the example restaurants:

- Anejo Mexican Bistro 3,153 Therms x (1.20/75%)=**\$5,045**
- Chillis West Bridgewater Ma-3,058 Therms x (1.20/75%)=**\$4,893**
- Denny's in Miami-4,182 Therms x (1.20/75%)=**\$6,691**

In Massachusetts, the major natural gas companies provide incentives for energy efficient equipment for heat recovery under their custom application program.

EcoThermal Filters will purchase the rights to all carbon credits associated with the installation of the system.

Payback is measured in months, not years.

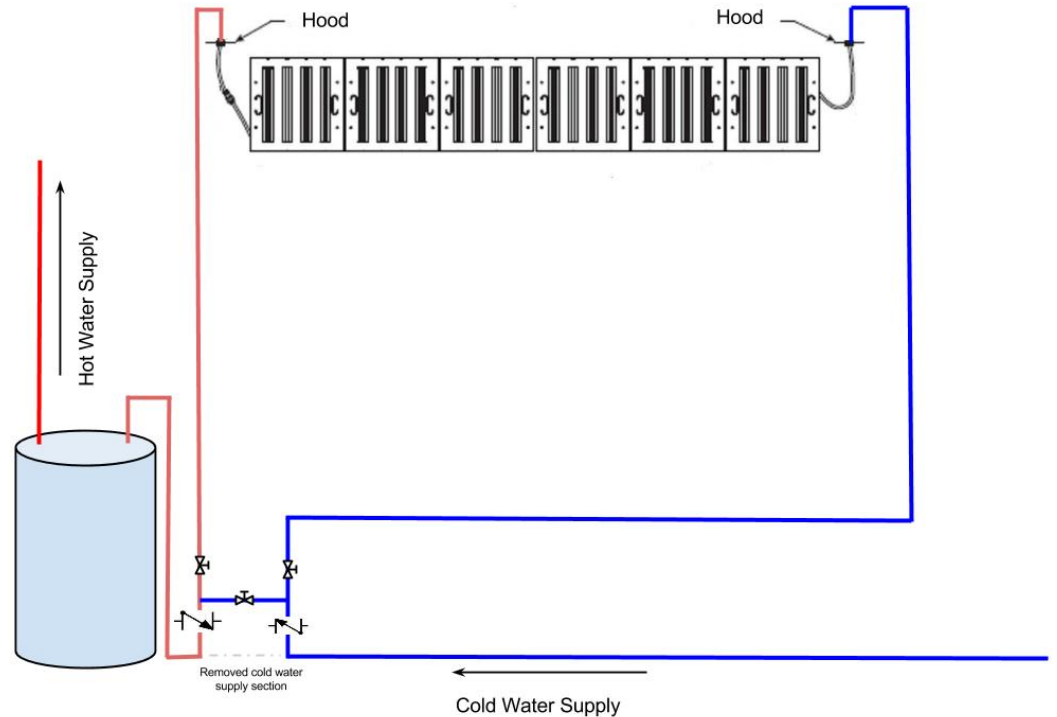


- EcoThermal Filters are UL certified
- They are NSF certified for use in commercial kitchens
- The system was awarded a Kitchen Innovation Award in 2011 by the National Restaurant Association



How it works

- Cold water supply to the hot water heater is redirected through the filter system.
- The redirected water flows over the hood through copper tubing within the filters directly over the cook line.
- Water exits the filters/hood at 125+ degrees F.
- Easy control system for disconnection and cleaning.
- Works with standard hot water heaters and on-demand systems.



Supported by Utility and State Energy Efficiency Incentives

- New Hampshire
- Vermont
- Massachusetts
- Rhode Island
- Connecticut
- New York
- New Jersey
- Pennsylvania (PGW)
- Arkansas
- Ohio (Columbia Gas)
- Indiana
- Illinois
- Michigan
- Minnesota
- Wisconsin
- North Dakota
- South Dakota
- Montana
- Idaho
- Missouri
- Washington
- Oregon
- Wyoming
- Utah
- Nevada
- Colorado
- California



Utility and state incentives are subject to change and approval. EcoThermal Filters will assist in any custom application process to receive incentives for the purchase and installation of our thermal recovery system.



Massachusetts Incentives

nationalgrid



In Massachusetts, energy efficiency incentives are available from the major gas companies. These incentives are available through a custom application process. The incentives will pay up to 50% of the installed cost to a 1 year payback on approved heat recovery systems.

EcoThermal Filters will assist in the entire incentive process on installed systems.

Reduces Carbon Footprint

If You Have Energy Data

If You Have Emissions Data

Please note that these estimates are approximate and should not be used for emission inventory or formal carbon footprinting exercises. Read more about the caveats and explanations on the [Calculations and References page](#)

3500

therms of natural gas

Calculate

Equivalency Results

The sum of the greenhouse gas emissions you entered above is

18.6

Metric Tons

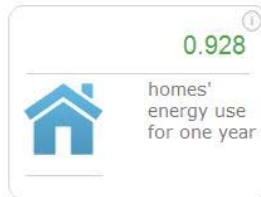
of Carbon Dioxide Equivalent. This is equivalent to:

Annual greenhouse gas emissions from



-or-

CO₂ emissions from



EcoThermal Filters Provide Superior Grease Collection

- In UL testing, EcoThermal Filters exceeded grease collection standards by 3.5 times.
- The patented design traps more grease in the filters and reduces the amount of grease that collects in the hood/ductwork. This can lead to reduced costs of hood cleaning and less atmospheric pollution from airborne grease.



*You've already paid for your gas once....
why would you want to pay for it twice?*

- Free Hot Water from your Cook Line
- Quick ROI
- Generates Hot Water when you need it
- Reduces CO² Emissions



Thank-you

EcoThermal Filters

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