California Energy Commission

Cookline Replacement Study

Gate Gourmet

Los Angeles, CA

Energy savings take flight…

If any foodservice facility knows the difficulties of kitchen equipment overuse, it's the international airline food catering company, Gate Gourmet. With 24/7 operation, multiple day shifts, and multi-step cooking processes, Gate Gourmet's cooking equipment is in continuous use resulting in substantial energy consumption and requiring frequent maintenance.

As a result, Gate Gourmet's LAX facility was selected as a site for the Commercial Cooking Equipment and Kitchen Ventilation System Baseline & Replacement Characterization study to research existing kitchen energy use and demonstrate energy savings through strategic equipment replacement. Frontier Energy, Inc., working in conjunction with SoCalGas performed the technical study for the California Energy Commission's (CEC) Natural Gas Research and Developement Program.

Frontier Energy researchers monitored existing equipment to obtain an accurate energy and water consumption profile for the Gate Gourmet kitchen.

Pre-makeover fryer (L) and ENERGY STAR® fryer (R)

BEFORE:

- The main cookline was equipped with: a high-volume gas fryer used for tempura items, chips, and garnishes, two 60-gallon steam kettles primarily used for quick-blanching vegetables; and two 4-ft. underfired char-broilers used for batch-cooking grilled meat and vegetables.
- The two steam kettles and two underfired broilers accounted for more than half of the total energy consumed by Gate Gourmet's entire cookline.
- The two cooklines at Gate Gourmet were estimated to consume 115 therms per day.

Annual Operating Costs[1]

Pre-Makeover Costs	$12,870
Post-Makeover Costs	$7,548

[1] Gas utility rates based on $1.00/therm.

Operating Savings[1]

Annual Energy Savings	$5,322
Rebate Savings[2]	$5,749

[1] fishnick.com/saveenergy/rebates.
[2] Rebate = $500 per oven cavity.

AFTER:

- The cooklne is now equipped with: an ENERGY STAR gas fryer, an ENERGY STAR two-compartment steamer, and an enclosed energy-efficient conveyor broiler.
- The cookline consumes an average of 88 therms/day.

FRONTIER energy

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Pre-makeover underfired broiler

Energy-efficient conveyor broiler

Pre-makover steam kettle

ENERGY STAR two-compartment steamer

Quick Guide to Gate Gourmet Savings

	EQUIPMENT UPDATE	ENERGY SAVINGS	BENEFITS
MAXIMIZED COOKLINE	Replaced entry level fryer with an ENERGY STAR fryer with integrated oil filtration	31%	Improved performance, decreased cook-time, faster recovery, increased oil life
	Replaced steam kettle with an ENERGY STAR steamer	81%	Reduced energy consumption, increased cooking flexibility
	Replaced 4' broiler with an energy-efficient conveyor broiler	13%	Improved performance, innovative technology, increased cooking flexibility

Gate Gourmet's steam kettles, operated continuously allowing steam to escape into the kitchen space and putting unnecessary demand on the ventilation system. Steamers, on the other hand, limit wasted steam, transfer heat-to-food more efficiently, and are easy to use, which made for a smooth transition. The steamer was also able to replace several countertop rice cookers, saving even more energy and labor for Gate Gourmet.

Conveyor broilers are popular for their efficient design and high production capacity. The new broiler reduced the energy footprint and also improved kitchen comfort by greatly reducing the heat that was generated from the old underfired broiler.

Fryer technology is improving with better insulation, smarter controls, and more efficient heat exchangers. The ENERGY STAR fryer featured an integrated oil filtration system which extended the oil life by two days, resulting in a savings of $2920 per year in oil costs (based on $24 per jug costs).

Represented by the savings in this study, an ENERGY STAR fryer replacement (coupled with a California Utility Rebate incentive to help offset initial costs) is a simple way for a foodservice operator to begin saving energy and money right away. Gate gourment saved $5,322 in annual operating costs as well as saving $5,749 by taking advantage of California Utility Rebate incentives.

As demonstrated in this study, operating with the same status quo equipment is no longer the only option for foodservice operators. Through improved energy-efficiency education, the industry can begin to phase out these old, inefficient technologies in favor of efficient equipment with demonstrable savings.

Equipment Savings and Rebates

Fryer Operating Savings	$387
Fryer Rebate	$749
Steamer Operating Savings	$4,092
Steamer Rebate	$5,000
Broiler Operating Savings	$843