

Cookline Replacement Study

Versailles Cuban
Los Angeles, CA

Changing the Process...

Located in the Palms neighborhood of Los Angeles as one of four family-owned restaurants, Versailles Cuban serves classic Cuban dishes like their famous chicken marinated in mojo sauce. This original location has been wearing down their kitchen appliances for over 30 years with only few replacements. With increasing competition and razor-thin margins, Versailles sought to optimize their back-of-house operation and better control their gas and ventilation costs.

Versailles' aging lineup of standard-efficiency appliances made it an ideal candidate for the *Commercial Cooking Equipment and Kitchen Ventilation System Baseline & Replacement Characterization* study, which researched existing kitchen energy use and demonstrated 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 Development Program.

Frontier Energy researchers monitored existing equipment to obtain an accurate energy profile for the Versailles Cuban kitchen.



Replacement combi oven used to consolidate cooking duties from fryers and rangetops to cook a variety of Cuban dishes.



BEFORE:

- The front cookline was equipped with: a doublestack convection oven, a 6-burner range, an 8-burner range/2-ft. griddle suite, and two 18" fryers.
- The back cookline was equipped with: a doublestack convection oven, a 6-burner range with an overhanging salamander, a 4-burner/4-ft. griddle suite, and two 18" fryers.
- Versailles used 30 total stock pots and sauce pots along with 70 total frying pans.
- The two cooklines combined used about 43 therms/day.

Annual Operating Costs¹

Pre-Makeover Costs \$15,324

Post-Makeover Costs \$8,954

¹ Gas utility rates based on \$1.00/therm. Excludes demand-controlled ventilation savings.

Operating Savings¹

Annual Energy Savings \$6,370

Rebate Savings ² \$5,396

Annual Oil Savings ³ \$14,112

¹ fishnick.com/saveenergy/rebates.

² Rebate total based on \$749/fryer vat, \$500/convection oven cavity, \$1,100/12-pan combination oven cavity, and \$300/3-ft. griddle.

³ Oil savings based on \$28/jug.





Replacement 3-ft. griddle & 6-burner range.



Replacement dual-vat best-in-class fryer with integrated oil filtration.



Replacement stock pot ranges with finned-bottom pots for improved heat transfer.



Combi oven “crisp-and-tasty” controls for cooking fried food alternatives.

AFTER:

- Both doublestack ovens were replaced with an energy-efficient doublestack convection oven and a 12-pan combination oven.
- All four fryers were replaced with three energy-efficient fryers: two 18" ENERGY STAR® fryers and one dual-vat best-in-class 14" fryer with integrated oil filtration.
- The range/griddle suites were replaced with a 3-ft. thermostatic griddle, two 2-burner stockpot ranges, and a 6-burner countertop range.
- Versailles' range burner cookware was replaced with 28-finned bottom pots and 69 finned-bottom pans.
- The two cooklines now use about 26 therms/day, a 41% energy savings.

Quick Guide to Versailles Cuban Savings

| | EQUIPMENT UPDATE | ENERGY SAVINGS | BENEFITS |
|---------------------------|---|---|--|
| MAXIMIZED COOKLINE | Replaced two doublestack convection ovens with ENERGY STAR doublestack oven and 12-pan combination oven | 62% ¹ Contributed to energy savings of fryers | Menu flexibility, reduced cook-times, reduced total energy use, reduced oil costs, consolidation of cooking duties |
| | Replaced standard pots and pans with Turbo Pot-brand finned-bottom cookware | 32% | Improved heat transfer, reduced cook-time, reduced range energy use |
| | Replaced four fryers with two ENERGY STAR 18" fryers and a dual-vat best-in-class fryer w/ oil filtration | 73% ² | Faster recovery times, extended oil life, reduced fryer energy use |

¹ Calculated energy savings based on one-to-one comparison with lab-tested baseline doublestack convection ovens.

² A portion of fryer energy savings can be attributed to the addition of an ENERGY STAR combi oven.

One of the most impactful changes to the Versailles cookline was the addition of the combi oven. Most traditional kitchens use individual appliances for each type of cooking process, but combi ovens can use multiple cooking methods (e.g. baking, roasting, frying, etc.) all within a single cavity. Versailles could now consolidate cooking duties onto the versatile combi oven for dishes once cooked on range tops and fryers, which significantly contributed to the energy savings for the entire cookline. For example, Versailles used the combi to cook chicken using the combi's “crisp-and-tasty” function, which emulates the crispy texture of fried food. This cooking process change reduced cook-times and fryer energy use, while producing healthier chicken dishes.

The combi oven addition allowed Versailles to eliminate one fryer altogether from their kitchen. Coupled with adding an energy-efficient dual-vat fryer with an integrated oil filtration system, Versailles saved on oil across the operation, resulting in an annual oil savings of \$14,112. The replacement fryers also produced faster recovery times and saved Versailles \$3,640 per year in energy costs.

Versailles frequently used stock pots to cook a variety of dishes including soups, beans, rice, and traditional Cuban stews. Currently, the only energy-saving solution on the market for gas ranges is finned-bottom cookware, which improves heat transfer between the burner flame and the cooking vessel through increased surface area on the bottom of the pots and pans. After adopting the new cookware, Versailles saw substantially reduced cook-times and a combined gas range energy savings of \$2,184 per year.

In the end, Versailles saved \$6,370 in annual energy costs with an additional \$5,396 in California utility rebate incentives. The project demonstrated substantial savings through energy-efficient equipment replacement and an innovative approach to optimizing gas range burners for energy savings. The combi oven also enabled Versailles to streamline their kitchen processes to be more productive and cost-effective.