



Pan searing steaks with induction's superior cookware heating efficiency.

Elevating Kitchen Electrification with Induction Cooking Technology Central Coast, CA

Fine dining is one of the most reluctant commercial foodservice segments to transition to electric cooking appliances. Long a bastion of traditional, open-flame cooking techniques on natural gas-fired open burners and French tops, fine dining kitchens are incredibly energy intensive and uncomfortably hot working environments. Until recently, electric range tops have not been a viable alternative to their natural gas counterparts. Electric resistive elements are slow to heat, slow to respond to control inputs, and expensive to operate given the high cost of electricity compared to natural gas in Pacific Gas & Electric (PG&E) service territory. However, the anemic resistive element cooktops have recently given way to the more powerful and energy-efficient induction cooktops, purpose-built to surpass the performance of traditional natural gas open burners and French tops.

Advanced induction cooktops generate an electromagnetic field below the cooking surface that excites the molecules of the cookware above. Acting as a system, the cookware becomes an instantaneous heat source, absorbing ~90% of the total energy consumed by the induction cooktop. With controls that modulate the frequency of the electromagnetic field, the temperature response to the cookware is rapid and precise. Additionally, removing the cookware from the electromagnetic field opens the system's circuit and stops the cooktop from consuming any energy.



Original Natural Gas-fired French top.

With a high level of energy transfer to the cookware and no standby energy use, an induction cooktop imparts no radiant heat to the kitchen space, making for a much cooler work environment. Lastly, induction cooktops are easy to clean and maintain with a flat, glass-ceramic cooking surface.

After attending a PG&E-sponsored Induction Cooking Technology class hosted by the energy efficiency and equipment experts at the Food Service Technology Center (FSTC), the Directory of Culinary and Chef of a coastal fine dining restaurant located inside the iconic Rancho Pico Blanco luxury hotel reached out to the FSTC to learn more about the technology.



Full-size Induction Range Demo Unit at the FSTC.

With the hotel’s goal of decarbonizing the entire property, Chef recognized the importance of retiring the natural gas cooking appliances from their kitchen. But so unique are the cooking characteristics of “tried-and-true” natural gas range tops that it was crucial for Chef and his culinary team to gain hands-on experience with induction cooking technology before committing to a purchase as a permanent replacement.

Meeting with the FSTC’s equipment demonstration team on multiple occasions, Chef was able to work on a powerful, full-size induction range with a flexible cooking surface. Characterized by multiple small, interconnected induction hobs spread beneath the range top’s surface, this model features a much larger inductive field on which to place cookware. The induction range provides a similarly sized cooking surface to the traditional French top currently used in their restaurant, while surpassing its heat-up performance. Chef was also impressed by the temperature responsiveness and reduction in radiant heat of the induction range. Chef cited heat reduction as a one of the most beneficial attributes of induction cooking technology given that his staff typically experience average kitchen temperatures around 100°F.

High-powered induction cooktop manufacturers offer haute cuisine a viable alternative to traditional natural gas-fired open burners and French tops. For Rancho Pico Blanco’s kitchen, the new induction range tops will be central to Chef’s efforts to provide his team with the tools to continually evolve and elevate the guest experience while helping to meet the property’s ambitious sustainability and decarbonization goals.



Delicate sautéing with induction’s precise temperature control.

Performance Comparison: Original Natural Gas French Top vs. Electric Induction Range Top

Rotisserie	Rated Input	Annual Energy Use	Annual CO ₂ Generation ²	Annual Operating Cost*	Cooling Requirements
Original French Top	30,000 Btu/h	1,300 Therms	3.5 mt	\$2,340	1.2 tons
Induction Range Top	27.0 kW	5,880 kWh	0.01 mt	\$1,650	0.0 tons

*PG&E 2022 utility rates: \$1.8/therm and \$0.28/kWh.