

SPECIAL REPORT

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FROM ENERGY EFFICIENCY TO OPERATIONAL ADAPTABILITY

FINDING SOLUTIONS TO A RAFT OF INDUSTRY CHALLENGES:
INDUCTION TECHNOLOGY'S TRANSFORMATIVE BENEFITS



FOODSERVICE CONSULTANTS SOCIETY INTERNATIONAL



EXECUTIVE SUMMARY

Innovation in induction technology is driving the foodservice industry's transition from traditional carbon-heavy cooking methods, such as gas. Such technological advancements continue to help tackle and transform operations amid industry challenges, from soaring costs to sustainability requirements, labor shortages, and more.

The unique characteristics of induction technology enable foodservice consultants, commercial kitchen designers, and operators to find solutions to these challenges, bridging the gap between advanced engineering and commercial kitchen profitability.

The energy-efficient qualities of induction technology, combined with close alignment of Environmental, Social, and Governance (ESG) goals, training to leverage equipment to its full potential, and creating a safer, more sustainable working environment, will enable operators to harness greater profitability and a more adaptable kitchen environment.

This paper discusses how induction technology contributes towards a greater return on investment (ROI) through reduced energy usage and costs, boosted efficiency and profitability, with insights from FCSI Professional member consultants, who aim to help operators meet net-zero targets and prepare for advancing legislation, and equipment manufacturer Hatco, in support of finding alternatives to the gas phase out, to create more agile and flexible kitchens in the process.

KEY TAKEAWAYS

- The scientific nature of induction technology is effective in increasing energy efficiency and creating a safer, more sustainable kitchen
- Technological advancements of induction technology such as temperature control and presets help improve quality and automate the kitchen amid labor shortages
- Aligning ESG goals and long-term training of equipment use will better prepare foodservice operators with a greater ROI through induction technology



INTRODUCTION

Foodservice consultants, commercial kitchen designers and foodservice operators are increasingly reliant on technological advances to solve or ease today's industry challenges. A landscape of rising operational costs, increasingly stringent health and safety and sustainability regulations, and the ongoing pressures of labor shortages, supply chain disruption and more, continues to obstruct profitability for foodservice operators in a challenging landscape.

Induction innovation is a driving force in the foodservice industry's transition from traditional gas cooking that provides opportunities to offset these challenges, particularly as foodservice design consultants look to support operators and clients to be more sustainable and efficient amid corporate net-zero goals and local government bans on commercial gas infrastructure.

The unique science of the technology itself means that fuel usage can be drastically cut for operators, reducing energy costs, while also creating a better working environment for staff due to lower levels of ambient heat in the kitchen, as well as eliminating gas leaks, reducing indoor emissions and decreasing risk of burns for the end-user.

"There was hesitation in adopting induction technology initially because of cost, but as more people realize the benefits and see the savings... the costs are coming down," says Pamela A. Eaton FCSI, NGAAssociates Foodservice Consultants, Inc.

Additional features, such as greater temperature control and programmability, and even 'smart' kitchen integration, have improved induction technology further, freeing up time for chefs to work more efficiently, in a kitchen that also provides a better working environment, which bolsters staff retention. The result? A futureproofed kitchen that is ready to harness automation and adapt to different needs and priorities to retain profitability despite uncertainty.



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Pamela A. Eaton FCSI,
NGAAssociates Foodservice
Consultants, Inc.



1 INNOVATION FOR EFFICIENCY

How core science is transforming energy efficiency

As the foodservice industry steers away from traditional cooking methods, induction combines advanced engineering with opportunities for operators to improve profitability by addressing consultants' and consumers' intentions to become more environmentally conscious, while also enhancing energy efficiency, reducing fuel costs, and lowering carbon emissions.

"Induction technology is highly efficient in both the operation of the kitchen and the building itself," says Shelby Wurscher FCSI, senior project manager, Rippe Associates. "Induction cooking can provide precise temperature control, faster cooking times, greater cooking consistency with less food waste, and increased labor efficiency."

The scientific nature of induction technology makes it more energy-efficient, as less electricity is required to deliver heating. By using electromagnetic energy, it creates a high-frequency current in the coil that is transferred to the pan, releasing heat with up to 85-90% efficiency, compared with 30-40% efficiency for gas in the best cases. This means kitchens use direct energy efficiency only when needed, without preheating, unlike a gas range, where cooks may turn on the power and leave it on throughout the day. This also minimizes the amount of ambient heat lost to surroundings, saving energy in heating, ventilation and air conditioning (HVAC) loads.

"Induction cooking equipment offers precise temperature controls, rapid response times, programmable cooking settings, and menu presets to help improve the consistency and efficiency," says Wurscher. "Many have digital controls with automated cooking programs and the ability to connect with their kitchen management systems."

Precision, control, programmability

Programmable induction platforms further support profitability by helping operators standardize processes and reduce variability across shifts.

“Precise control and programmability enable labor savings and quality improvements,” says Mark Gilpatric, CFSP, product and application manager at Hatco. “If you can press a button and walk away and you know it’s going to be doing exactly what you need it to do, you can spend some time doing other tasks.”

“Induction also has faster recovery times,” adds Eaton. “If you’re cooking burgers on a griddle, you’re not waiting as long for it to heat back up and start cooking. Theoretically, a minute here and there will let you serve more customers, with greater efficiency at peak times, hopefully increasing revenue.”

While controllability has been ubiquitous in foodservice equipment for some time, real advances in this technology lie in temperature control. Using core probe technology, accurate temperature sensing of food products within user controls allows the operator, or chef, to program specific processes per different products’ cooking requirements.

“The combination of probe and programmability proves greater control on the food product, which allows the operator an almost ‘set it and forget it’ scenario,” says Raoul Cervantes, owner, consultant services sales manager at Hatco. “Induction requires immediate attention when in use, but having programmability within the induction units allows for automation, which increases efficiency.”

Improvements in proportional integral (PI) temperature control help to narrow in temperatures for items with more delicate temperature needs.

“These improvements in control technology, together with programmability, have been enabled by the use of LCD screens that can provide more instructions and information onscreen that the operator can take advantage of,” says Gilpatric. “Some ranges have step-by-step recipes with exact power levels, times and instructions to standardize cooking processes.”

This level of control also minimizes food waste as food is more likely to be cooked precisely, minimizing food waste from burned food, and, therefore, emissions.

“Such customization can accommodate clients with particular needs,” says Cervantes. “Being able to tweak the control package from a software standpoint and then replicate that on all in use is a game changer, compared to gas products.”



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Raoul Cervantes, owner, consultant services sales manager, Hatco

The 'smart' kitchen integration

'Smart' kitchen integration enables programming of Internet of Things (IoT)-enabled induction hobs to leverage automated cooking settings and AI features. So far, the induction ranges in the US do not take advantage of the Smart Kitchen, but that is likely in the future.

Bluetooth and Wi-Fi connectivity could potentially enable automated preset cooking programs and voice-assistant features that improve workflow consistency, quality and repeatability amid labor shortages, and offer effective ways for operators to modernize, and thus, futureproof kitchens, with more capabilities, greater flexibility and efficiency.

"Induction technology is great for smart kitchens because it's high efficiency, with preset programs, recipes that take the guesswork out of the process, to make it easier to train staff and provide a consistent product," says Wurscher. "Having the ability to remotely monitor and connect with kitchen management systems lets the client keep track of the equipment's performance, its energy use, any downtime or maintenance needs, which can be especially helpful when you're needing to monitor multiple devices across multiple locations."



2 MITIGATING COSTS

The realities of cost-benefit analysis and ROI

With consultants keeping heating, ventilation, and air conditioning (HVAC) loads top of mind, induction offers a strong opportunity to address one of today's challenges from both operational and design standpoints: energy costs.

"The key savings and ROI of induction will be in the efficiency," says Gilpatric. "Induction will be up to 85-90% more efficient compared with around 35% of gas. Those savings come from the HVAC and ventilation loads, and labor savings, particularly with the advantage of repeatability and programmability."

While costs remain a pressure point, particularly as consumers tighten household spending, operators need to consider investments wisely, particularly as the US faces greater pressure to transition to electrification in the future. Switching from gas creates greater flexibility and adaptability, as operators can integrate non-built-in induction, making it possible to move the product and rearrange kitchen layouts, or use it for multiple purposes, such as pop-ups.

"Operationally, induction can offer greater flexibility with modular options and mobile stations, and in some cases without needing a hood, and bring cooking to more areas, increasing revenue opportunities," says Wurscher.

Induction also reduces hood requirements compared with gas or standard electric. "That's an additional expense that can be reduced with induction, which contributes to profitability," says Eaton.

This also provides more flexibility if menus change, offering greater cost benefit to the foodservice operator.

"Hatco's ROI analyses show that labor savings, utility reductions, HVAC load reductions, and operational efficiencies can collectively create compelling payback periods for both cooking and warming applications," says Cervantes. "The result is a technology that helps operators manage rising utility costs, labor challenges, and margin pressures simultaneously."



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Mark Gilpatric, CFSP,
product and application
manager, Hatco





3 THE FUTURE KITCHEN

Workplace health and safety

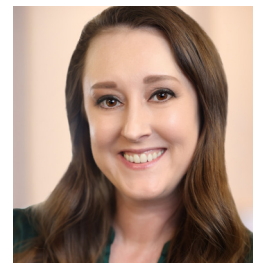
Induction technology also reduces the risk of burns, eliminates gas leaks, and limits indoor emissions. Operators also create better working conditions for staff, as less emitted heat reduces extraction and HVAC load, creating a cooler, more comfortable work environment for kitchen staff. This is more likely to bolster staff retention to mitigate labor shortages.

“Induction technology improves health and safety by eliminating the open flames, reducing ambient kitchen heat, keeping the cooking surface cooler than traditional gas or electric equipment,” says Wurscher. “And without an open flame, you have a lower risk of burns. There’s less heat, improved air quality, and just that improved overall employee well-being.”

“Gas, when you’re burning it, releases carbon monoxide and nitrogen dioxide into the air,” adds Eaton. It also depletes the oxygen, so that combination, at a normal active cooking level, is long-term degrading to the health of staff in that environment.”

Comparatively, induction does not release toxins and prevents the room from reaching high temperatures, which means there is less need for ventilation to balance them.

“The result is a much cleaner kitchen versus traditional cooking, especially when spillage happens,” adds Cervantes. “With induction, it’s typically a wipeable glass top surface compared to gas burner grates that can fall through the product itself.”



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Shelby Wurscher FCSI,
senior project manager,
Rippe Associates

Sustainability and compliance

In the US, sustainability is an increasingly critical consideration, one that foodservice design consultants continue to help operators and clients with by onboarding them and helping them find more sustainable operations and energy efficiency through induction technology. As net-zero targets ramp up and operators must prepare for upcoming legislative phase-outs of gas equipment, induction technology offers multiple benefits.

“As consultants, we know that many of our clients have sustainability goals of reducing their energy costs and consumption while still maintaining the core of their business,” says Wurscher. “We can help the operators evaluate their menu needs and workflows to determine where induction technology can deliver the greatest value.”

By using induction equipment, operators can reduce energy consumption, lower ventilation demands and improve operational efficiency, aligning both the client’s operational and sustainability targets. That provides operators with kitchens that use less energy, stay cooler, and are easier to operate long term.

“Induction will definitely be a sustainability improvement for operators and consultants because of direct energy savings,” says Gilpatric. “Furthermore, it relies on electricity instead of gas, which can be generally generated with less carbon than using gas. Increasingly, that will be coming from carbon-free sources in the future.”

As a next step, operators should align themselves with ESG initiatives to focus sustainability motivations, urges Cervantes, to strengthen efforts more effectively.

“Induction technology supports long-term sustainability by reducing energy consumption, lowering emissions, and helping operators meet decarbonization goals,” says Wurscher. “Induction equipment fits right in where we’re seeing a lot of electric-only facilities now.”



CONCLUSION

Induction technology offers a range of solutions to the challenges foodservice operators face. By continuing training in the effective use of equipment and focusing on ESG goals, alongside guidance from consultants, foodservice operators can leverage the energy-efficiency benefits of induction technology over traditional gas cooking methods.

The programmability embedded into the advancements of induction technology further supports staff with more precise cooking capabilities, greater control and automation, and time management. The result is enhanced efficiency, more focused sustainability efforts, reduced operating costs through fuel savings, and a more adaptable, future-proofed kitchen, all while creating a safer working environment, increasing employee retention and minimizing labor shortages.

As we look towards an uncertain landscape where existing and new challenges persist, futureproofing the kitchen will be essential for foodservice operators to retain profitability. For consultants and operators, induction is increasingly viewed not merely as an equipment choice but as a long-term design strategy to improve efficiency, resilience, and sustainability, while preparing kitchens for future regulations and operational requirements.



ABOUT HATCO

Hatco began in 1950 with the mission to be the world's leading manufacturer of innovative, customer-focused solutions for the foodservice professionals who value quality products and service. Back then, it recognized the need to properly sanitize dishware and responded by developing the Powermite® Electric Booster Water Heater that generated 180°F (82°C) sanitizing rinse water, which soon became the industry standard.

More recently, Hatco has stayed at the forefront of new trends and technologies, responding with innovative equipment solutions. Though induction is far from a new technology, its popularity has grown due to the energy efficiencies it provides for commercial foodservice operations. Hatco has introduced an award-winning line of induction solutions – including Rapide Cuisine® Countertop & Drop-In Induction Ranges, Palletti® Countertop & Drop-In Induction Warmers, Boxer® Countertop Induction Ranges, Maskerade® Undercounter Induction Warmer and Drop-In Induction Dry Well – that takes induction cooking and holding to a new level.

FURTHER INFORMATION:

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