COMMERCIAL
FOODSERVICE EQUIPMENT

GUIDE: "BURGER & FRIES" CONCEPTS

SoCalGas™

IN AN EVER-CHANGING FOOD LANDSCAPE,

the humble hamburger and its steadfast french fry companion remain a cornerstone of American dining—simple, familiar, and endlessly adaptable. Whether served in a family-owned diner or a fast-growing franchise, burgers continue to drive traffic and revenue. But staying competitive in today's $165.5 billion U.S. burger industry takes more than serving good quality food—it requires smart approaches to consumer expectations and operational challenges.[1]

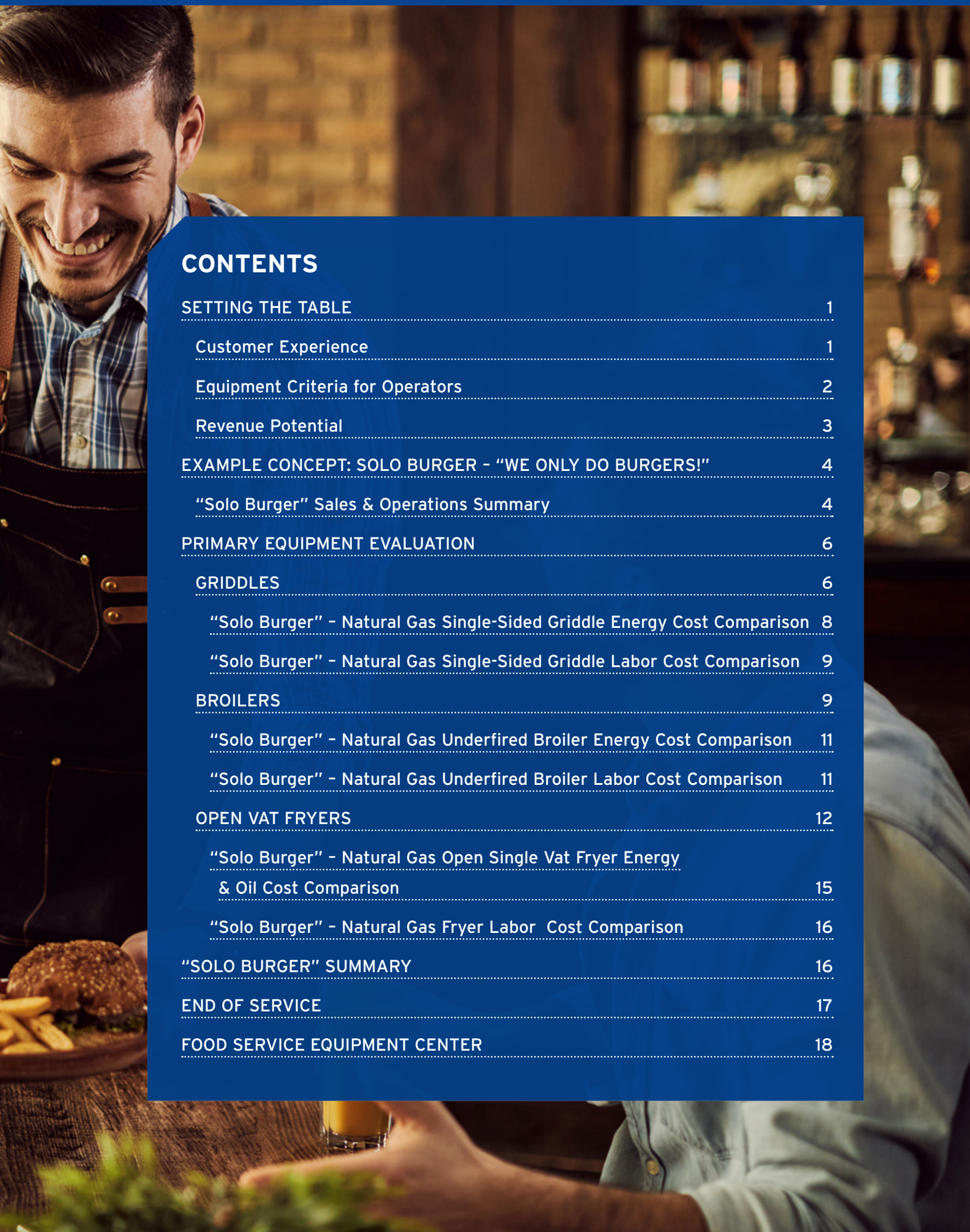
Historically, the commercial foodservice industry's approach has been reactive, rising out of necessity rather than choice. However, success in foodservice now hinges on being proactive—streamlining systems, cutting inefficiencies, and investing in the right equipment. Standardizing a restaurant's workflow, starting with the cooking equipment, could increase consistency, lower operating costs, boost scalability, and help free up time and resources for menu innovation and refining the customer experience.

The kitchen cookline directly affects the speed, quality, and profitability of foodservice operations. High-performance, energy-efficient equipment, when properly specified, may solve bottlenecks, could reduce labor costs, and help accommodate increasing demand, ensuring that growth doesn't come at the expense of profitability. But what equipment options are available? And what considerations are necessary to make the right purchasing decisions?

THIS GUIDE WILL:

1. Present the elements of customer experience,
2. Define equipment purchasing criteria,
3. Summarize the sales and operations assumptions for a hypothetical full-service burger restaurant, "Solo Burger",
4. Evaluate the primary equipment options for "burger-and-fries" concepts, and
5. Provide a cost-benefit analysis of efficient equipment using "Solo Burger" as an example.

1. IBISWorld. Burger Restaurants in the US - Market Size 2005-2028.



CONTENTS

SETTING THE TABLE

CUSTOMER EXPERIENCE

Evaluating an operation can feel overwhelming, but a good starting point is to focus on the customer and work backwards. Since customer experience is central to the operation's success, this approach provides a clear, manageable path—leading all the way back to the menu offerings and ordering guides.

FOOD QUALITY

Success begins with aligning food quality to concept. There are incredible burger joints, reliable burger bars, and scalable specialty restaurants, and much of this difference comes down to ingredient selection and preparation methods.

SERVICE STYLE

- Service style (quick service, fast casual, full-service casual, full-service fine dining) has a direct influence on kitchen operations. The complexity of the menu should match the service style to provide a seamless customer experience.
- There is a critical relationship between service style and kitchen capabilities. Service issues can recur when front-of-house and back-of-house operations are misaligned.
- Choosing the right equipment for the operation may greatly enhance the efficiency and reliability of this connection.

TURN TIME

- The type of service heavily influences turn time. In a full-service restaurant, understanding customer expectations is key—dinner service may be slower and more drawn-out, while quick service demands faster turnover.
- Managing turn time is crucial. While customers are unique individuals, peak dining times often overlap. The challenge lies in balancing the need to serve as many guests as possible while ensuring a satisfying customer experience.

VALUE

- Value ties all the other factors together and includes elements such as ambiance, décor, and the type of wares used for service.
- Ultimately, value is critical in determining the pricing strategy, ensuring the experience meets both customer expectations and business goals.

EQUIPMENT CRITERIA FOR OPERATORS

The customer experience directly informs the cooking equipment evaluation. Operators may apply the following criteria to equipment purchasing decisions to match their concept.

PERFORMANCE & ENERGY EFFICIENCY

There is a misconception that energy efficiency sacrifices performance, but energy efficiency and performance are closely correlated. High efficiency equipment will typically have greater production capacity, cooking more food in a shorter time. The performance improvement can reduce operating costs and better meet periods of high demand, which is critical to maximizing customer satisfaction and revenue potential.

Energy is a significant cost for restaurants, which may be some of the most energy-intensive commercial buildings. As a result, energy efficiency is a critical business consideration for operators. The more effectively the equipment uses energy, the more of that purchased energy ends up in the sold food product.

Due to more advanced heat exchanger and burner designs, as well as premium features like intelligent controls and automation options, efficient equipment generally has a higher initial purchase cost than standard equipment. Even with its various benefits, opting for efficient equipment can be a difficult decision for operators with limited budgets. However, the demonstrable energy cost savings and output potential may provide a return on investment over the course of the equipment's operational life. Utility-sponsored equipment rebate programs like the SoCalGas Commercial Foodservice Program can also help operators defray a portion of the cost premium of energy-efficient equipment.

LABOR

Cost Reduction / Consistency

Labor is often the highest expense in any food service operation, so examining how equipment and controls can offset labor is essential.

Equipment with temperature inconsistencies or limitations may pose challenges for management, as experienced cooks may develop specialized techniques to compensate, making inconsistencies harder to identify and address.

By investing in reliable, consistent equipment that automates certain tasks, fewer cooks can handle more responsibilities while maintaining consistency and operational efficiency.

Training / Turnover

High training demands and employee churn are significant cost burdens and create serious challenges to operations.

To overcome the limitations of equipment and demanding service challenges, cooks develop unique methods. This creates barriers to managing consistency and cross-training.

SAFETY

Employee

Safety is frequently considered but often doesn't receive the attention it deserves. With developments like indoor heat illness regulations and improved hot oil management, safety measures may:

- Potentially lower insurance premiums
- Help boost employee morale
- Reduce time-loss incidents

Food

More energy efficient equipment with faster recovery times and precise repeatability can improve the accuracy of time-based cooking systems, ensuring consistent food quality and safety.

LONGEVITY

Specification

Incorrect specification is a common issue, especially in independent operations, though it occurs industry wide. These challenges often arise not from the equipment itself but may be from selecting and using equipment that is not properly suited for the intended purpose.

Durability

Many efficient pieces of equipment are designed to help meet the rigorous demands of large chains, resulting in greater durability and robust service networks.

Service Needs

Achieving higher efficiency and performance may involve using more expensive components, but operators should evaluate the financial benefits against the potential increases in service needs. By doing so, they may have a better chance of maximizing the value of their equipment over time.

REVENUE POTENTIAL

The customer experience is often in tension with the kitchen operations—any tweak to the service style or menu could have consequences for the labor or performance needs of the cooking equipment and vice versa. Successful restaurants find a balance between faithfully delivering their concept to customers while optimizing their kitchen operations with the appropriate equipment. A well-informed decision-making process based on the established criteria may help prevent unforeseen conflicts between these two areas down the line. When the concept and the equipment are aligned, an operator can realize their revenue potential.

EXAMPLE CONCEPT:
SOLO BURGER – "WE ONLY DO BURGERS!"

A craft-style burger restaurant dedicated to serving handcrafted 1/4-lb burgers, french fries, and condiments. The concept will feature a full-service, casual sit-down dining experience.

Note: All assumptions and calculations have been simplified for illustrative purposes. Performing such analyses for an actual concept requires more detailed input. Maintaining accurate records of guest counts, table turn times, inventory, plate costs, and menu mix is essential when calculating averages, especially when forecasting or analyzing specific times of the day or year.

"SOLO BURGER" SALES & OPERATIONS SUMMARY

OPERATING HOURS

Service Section	Start Time	End Time	Duration Hrs.
Total Hours of Operation (Includes Prep, Service, and Closing):	6:00 AM	10:00 PM	16.0
Prep AM:	6:00 AM	11:30 AM	5.5
Lunch Service:	11:30 AM	2:30 PM	3.0
Lunch Service Rush (80% of Covers):	12:00 PM	2:00 PM	2.0
Prep Afternoon:	2:30 PM	5:00 PM	2.5
Dinner Service:	5:00 PM	9:00 PM	4.0
Dinner Service Rush (80% of Covers):	6:00 PM	8:00 PM	2.0
Closing:	8:30 PM	10:00 PM	1.5

GUEST COUNT

	Weekday			Weekend			Annual		
	Off Peak	On Peak	Total	Off Peak	On Peak	Total	Off Peak	On Peak	Total
Lunch Service	30	120	150	44	176	220	12,376	49,504	61,880
Dinner Service	27	108	135	49	196	245	12,116	48,464	60,580
Total	57	228	285	93	372	465	24,492	97,968	122,460

FOOD COSTS

Item	Portion Size	Plate Cost	Menu Price	Food Cost %
Burger	4-oz	$4.10	$15.00	27.33%
French fries	8-oz	$1.00	$6.00	16.67%

POUNDS OF BURGERS

	Weekday			Weekend			Annual		
	Off Peak	On Peak	Total	Off Peak	On Peak	Total	Off Peak	On Peak	Total
Lunch Service	8	30	**38**	11	44	**55**	3,094	12,376	**15,470**
Dinner Service	7	27	**34**	12	49	**61**	3,029	12,116	**15,145**
Total	**14**	**57**	71	**23**	**93**	116	**6,123**	**24,492**	**30,615**

POUNDS OF FRIES

	Weekday			Weekend			Annual		
	Off Peak	On Peak	Total	Off Peak	On Peak	Total	Off Peak	On Peak	Total
Lunch Service	15	60	**75**	22	88	**110**	6,188	24,752	**30,940**
Dinner Service	14	54	**68**	25	98	**123**	6,058	24,232	**30,290**
Total	**29**	**114**	143	**47**	**186**	233	**12,246**	**48,984**	**61,230**

SOLO BURGER OPERATIONS & REVENUE SUMMARY

Summary	Off Peak	On Peak	Total Avg.
Average Guests per Hour	20	67	**46**
Average Pounds of Burgers per Hour	5	17	**12**
Average Pounds of Fries per Hour	10	34	**23**
Annual Revenue	$514,332	$2,057,328	**$2,571,660**
% Revenue	20%	80%	-

PRIMARY EQUIPMENT EVALUATION

The following equipment considerations are intended to help operators quickly differentiate between various grades of the same equipment and understand the advantages of more efficient options by applying the four criteria: (1) Energy-Efficiency/Performance, (2) Labor, (3) Safety, and (4) Longevity. The "Solo Burger" example will then be applied to each equipment category to demonstrate the benefits of energy-efficient equipment on energy and labor costs.

Note: This guide will focus on natural gas commercial foodservice equipment, as natural gas is the most prevalent fuel type for griddles, broilers, and fryers, and for some categories, presents greater opportunities for energy efficiency improvements and performance gains. Some of the options and benefits presented in the following sections may apply to equipment of all fuel types.

GRIDDLES

Griddles are the backbone of many burger-centric kitchens, often taking a central position on the cookline. These pieces of equipment are versatile and available in different options that may have a large impact on performance, energy use, and revenue potential.

GRIDDLE SUMMARY

Cooking Method	Controls	Duty Rating / Plate Thickness	Configurations	Width	Depth	Temp Range	Ideal "Burger-and-Fries" Application
Large smooth or grooved metal plate heated by burners underneath	• Non-thermostatic • Thermostatic	• Standard duty: 1/2" • Medium duty: 3/4" • Heavy duty: 1"	• Free-standing • Countertop • Drop-in	1-ft to 5-ft	15-in to 32-in	200°F to 650°F	Thin, lacey "Smashed" Burgers

Single-Sided Griddle Considerations

- Energy-efficient griddles:
  - Reduce energy use during non-cooking periods, which can make up most of a service day
  - Increase production capacity over a standard griddle model of the same size
  - Recover to the temperature setpoint faster than standard griddles
- Snap-action powered burners provide greater temperature uniformity across the cooking surface, creating a larger usable area
- The griddle cooking surface material can affect cooking time, recovery time, and uniformity

- Thermostatic controls and snap-action powered burners provide improved temperature uniformity and cooking repeatability as food safety measures
- Faster recovery times reduce the risk of foodborne illnesses and ensure consistent food safety/quality

- Reduced griddle footage (and kitchen space) needed for the same production
- Increased capacity of efficient griddles may reduce staff needs
- Temperature stability streamlines staff training/cross-training efforts

- Specifying a smaller griddle is possible for the same volume needs
- Cleaning requirements and durability may vary depending on surface material:
  - Steel plates are the most common and very durable, but tend to require more labor to clean properly
  - Chrome plates are the most expensive, and while easier to clean may require special attention to maintain their finish
  - Stainless steel surfaces offer a good medium between steel and chrome plate characteristics

THE CASE FOR A DOUBLE-SIDED (OR "CLAMSHELL") GRIDDLE

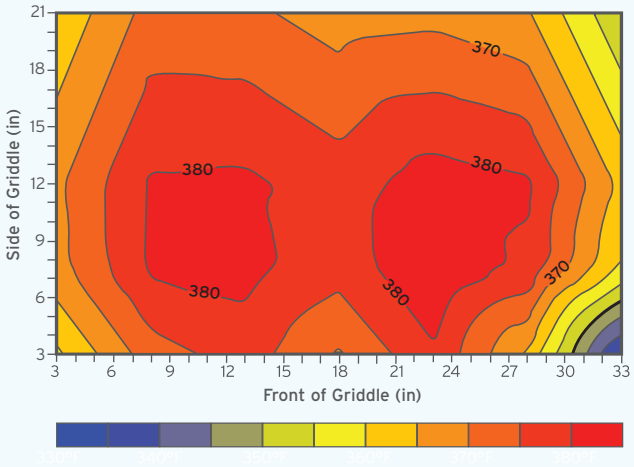
Commonly found in fast food establishments, double-sided griddles include additional cooking surfaces, called "platens", that lower onto the food to cook it simultaneously from both the top and bottom. While double-sided griddles have limited cooking versatility, they offer more precise controls, reduced labor/space needs, lower heat load to the kitchen, greater production capacity, and superior consistency than their single-sided counterparts. With reduced patty flipping and "closed" platen cooking, it also mitigates burn risk to griddle station operators.

Manufacturers now offer manually fitted platens for certain single-sided models, making double-sided griddles more accessible to independent operators looking for even more control and consistency in their griddle operations.

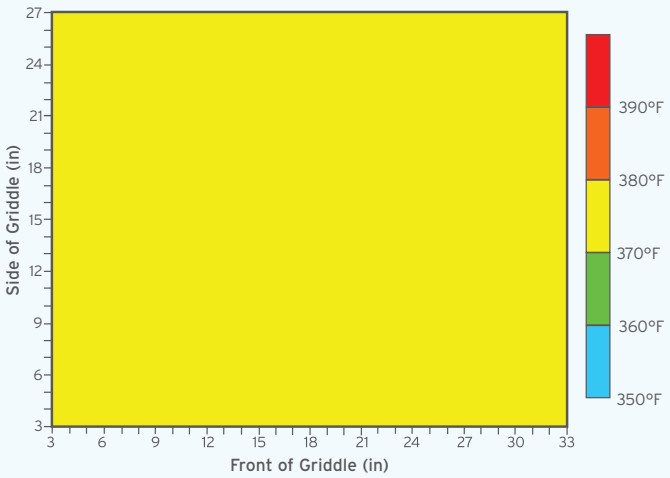
SoCalGas also offers rebates on natural gas double-sided griddles—visit caenergywise.com/rebates for more details.

ADVANCED TECHNOLOGIES

While thermostatically controlled griddles boast an impressive temperature uniformity, hot and cold spots are unavoidable. However, some advanced griddle designs use a sealed pressurized chamber under the cooking surface to distribute heat. As steam spreads evenly within the chamber, the griddle achieves a completely uniform cooking surface temperature, to help ensure consistent cook times no matter where a food item is placed. An infrared map of the cooking surface illustrates the stark difference in temperature uniformity between traditional griddle designs and these advanced "steam" chamber designs:



Traditional Griddle Surface Temperature Map



Advanced "Steam" Chamber Griddle Surface Temperature Map

"SOLO BURGER" – Natural Gas Single-Sided Griddle Energy Cost Comparison[2]

	Standard Efficiency	High Efficiency
Representative Width	3-foot	
Fuel	Natural Gas	
Daily Pounds of Burgers Cooked	81	
Average Operating Hours	16 hours	
Operating Days per Year	365 days	
Idle Energy Rate (BTU/hr)	21,000	12,408
Cooking Energy Efficiency	30%	46%
Production Capacity (lb/hr)	25	49
Therms per Year	1,506	999
Initial Equipment Cost	$8,458	$10,593
Rebate	N/A	**$250/ft[3]**
1st Year Total Cost	$10,717	**$11,342**
1st Year Cost Premium	-	**+$625**
Annual Energy Cost	$2,259	**$1,499**
Annual Energy Savings	-	**-$760**

2. Initial costs, performance data, and energy use calculations based on measure and base cases in the *California Statewide Measure Package SWFS004-03 Griddle, Commercial*. January 1, 2026. Natural gas rate of $1.50/Therm based on U.S. Energy Information Administration statistics.

3. Rebate amounts subject to change. Please visit caenergywise.com/rebates for the latest rebate program information.

"SOLO BURGER" – Natural Gas Single-Sided Griddle Labor Cost Comparison[4]

	Standard Efficiency	High Efficiency
Linear Feet of Griddle to Meet Peak Demand	12	7
Peak Days – Cooks Needed	3	2
Peak Hourly Labor Cost	$57	$38
Peak Daily Labor Cost	$456	$304
Peak Annual Labor Cost	$47,424	$31,616
Linear Feet of Griddle to Meet Non-Peak Demand	4	2
Non-Peak Days – Cook Needed	1	1
Non-Peak Hourly Labor Cost	$19	$19
Non-Peak Daily Labor Cost	$152	$152
Non-Peak Annual Labor Cost	$39,520	$39,520
Weekly Labor Cost	$1,672	**$1,368**
Weekly Labor Cost Savings	-	**-$304**
Annual Labor Cost	$86,944	**$71,136**
Annual Labor Cost Savings	-	**-$15,808**

4. The values in this model are based on the average needs of the fictional Solo Burger restaurant and the production capacities of standard and high efficiency equipment. Assumptions include one griddle cook per four feet of griddle and $19 labor cost per hour. Custom calculations determined by Frontier Energy's Labor Cost Model.

A high-efficiency, high-production griddle selection allows Solo Burger to specify a smaller griddle size to meet demand. During peak periods, Solo Burger will only need 7 feet of griddle width instead of 12 feet with a standard efficiency griddle. This also affords a reduction in griddle station staff—from three cooks down to two cooks needed during peak periods, an estimated labor savings of **$15,808 per year**.

Not only might the efficient griddle reduce labor costs and kitchen space needed to perform the same work, it could also save Solo Burger an estimated $253 in natural gas costs per feet of griddle per year. That is **$1,773 in natural gas savings** per year for a 3-foot and 4-foot griddle combo.

BROILERS

Broilers are a cornerstone of many foodservice operations. Broiling produces smoky flavors, charred textures, and marked grill patterns that illustrate the signature profile of certain "burger-and-fries" concepts. Broilers are highly energy-intensive, radiate lots of heat and smoke, and require ample ventilation.

Broilers are categorized into three types: **underfired (or "char-broilers")**, **overfired**, and **conveyor/batch**, differentiated by the position of the heat source relative to the food. This section will primarily focus on underfired broilers as they are the most common broiler type for a "burger-and-fries" concept.

BROILER SUMMARY

Cooking Method	Types	Controls	Burner Types	Configurations	Width / Size	Temp Range	Ideal "Burger-and-Fries" Application
Radiant and Convective Heated Grates / Grills	• Underfired • Overfired • Conveyor / Batch	• Manual (Underfired / Overfired) • Advanced, Programmable Control Interface (Conveyor)	• Cast iron or Stainless Steel Radiants / Burner Tubes • Infrared Burners	• Countertop • Freestanding	1-ft to 5-ft 1 to 3 belt "lanes" (Conveyor)	500°F to 1000°F	Smoky, Char-grilled "Pub-style" Burgers

Underfired Broiler Considerations

- Higher ventilation rates to capture heat and smoke could result in higher cooling load and cost to operate for broilers than most other cooking equipment
- Advanced infrared (IR) burner technology tends to save energy over traditional burner designs
- Consider using a broiler lid for improved heat retention and efficiency
- Energy-efficient underfired broilers may:
  - Use less energy
  - Provide equivalent production capacity as standard broilers
  - Lower the heat load (and the cooling needs) in the kitchen space

- Overall increase in radiant heat to the kitchen space may be a heat stress risk
- Efficient broilers tend to generate less heat into the kitchen space, creating a cooler kitchen environment and reducing worker fatigue
- Lack of thermostats, timers, or advanced controls could pose a food safety risk for unskilled cooks

- Manual controls require intuitive and continuous heat adjustments by skilled cooks
- Increased training costs and/or narrower labor pool for skilled operation of underfired broilers
- An increase in heat to space, if improperly managed, could decrease staff productivity and morale
- May increase additional labor for cleaning and maintenance

- Frequent cleaning and maintenance are essential to help provide longevity and continued performance
- Exhaust hood(s) over underfired broilers should be examined and cleaned at least twice per year

THE CASE FOR A CONVEYOR BROILER

Conveyor (or "batch") broilers are widely utilized in the chain restaurant industry but often overlooked by multi-unit and independent operators. These broilers use a steel belt to convey food through a heated compartment for a quick, unattended cooking process. They are particularly well-suited for large volumes of burger patties but can also accommodate other food products. Model sizes range from small tabletop units to large-capacity broilers used in fast-food operations featuring multiple belts or "lanes." Some conveyor broilers include an additional section specifically for toasting buns, allowing simultaneous cooking of different products such as chicken, steaks, or burgers.

Because the cooking cavity is enclosed and compact, the energy needed to achieve broiling temperatures is significantly lower than underfired broilers. Many units are also equipped with a catalytic converter on the flue, offering several advantages: it traps heat inside for greater efficiency, burns grease and smoke to reduce buildup in the ventilation system, and lowers heat load in the kitchen. These broilers incorporate more advanced controls too, allowing operators to select cook time and temperature. They feature onboard systems capable of storing time and temperature parameters for multiple products, streamlining the cooking process and reducing the need for constant supervision.

While highly specialized with a large initial cost, conveyor broilers help to deliver a consistent product in a predictable time frame, reducing training requirements, worker fatigue, and burn risk. Their efficiency and versatility make them an excellent choice for operations prioritizing consistency and high-volume output.

SoCalGas also offers rebates on natural gas conveyor broilers—visit caenergywise.com/rebates for more details.

"SOLO BURGER" – Natural Gas Underfired Broiler Energy Cost Comparison[5]

	Standard Efficiency	High Efficiency
Width	3-foot	
Fuel	Natural Gas	
Daily Pounds of Burgers Cooked	81	
Average Operating Hours	16 hours	
Operating Days per Year	365 days	
Idle Energy Rate (Btu/hr)	75,000	60,000
Production Capacity (lb/hr)	75	60
Therms per Year	4,380	3,504
Initial Cost	$6,696	$9,621
Rebate	N/A	**$600/ft[6]**
1st Year Total Cost	$13,266	**$13,077**
1st Year Cost Premium	-	**-$189**
Annual Energy Cost	$6,570	**$5,256**
Annual Energy Savings	-	**-$1,314**

5. Initial costs, performance data, and energy use calculations based on measure and base cases in the *California Statewide Measure Package SWFS019-04 Underfired Broiler, Commercial.* January 1, 2026. Natural gas rate of $1.50/Therm based on U.S. Energy Information Administration statistics.

6. Rebate amounts subject to change. Please visit caenergywise.com/rebates for the latest rebate program information.

"SOLO BURGER" – Natural Gas Underfired Broiler Labor Cost Comparison[7]

	Standard Efficiency	High Efficiency
Linear Feet of Broiler to Meet Peak Demand	9	9
Peak Days – Cooks Needed	3	3
Peak Hourly Labor Cost	$57	$57
Peak Daily Labor Cost	$456	$456
Peak Annual Labor Cost	$47,424	$47,424
Linear Feet of Broiler to Meet Non-Peak Demand	3	3
Non-Peak Days – Cooks Needed	11	1
Non-Peak Hourly Labor Cost	$19	$19
Non-Peak Daily Labor Cost	$152	$152
Non-Peak Annual Labor Cost	$39,520	$39,520
Weekly Labor Cost	$1,672	**$1,672**
Weekly Labor Cost Savings	-	**$0**
Annual Labor Cost	$86,944	**$86,944**
Annual Labor Cost Savings	-	**$0**

7. The values in this model are based on the average needs of the fictional Solo Burger restaurant and the production capacities of standard and high efficiency equipment. Assumptions include one broiler cook per three feet of broiler and $19 labor cost per hour. Custom calculations determined by Frontier Energy's Labor Cost Model.

Nine feet of efficient underfired broiler matches the production of nine feet of a standard broiler during peak periods. With the production capacity between an efficient and standard underfired broiler being roughly equivalent, there is no tangible difference in labor or sizing for Solo Burger.

Therefore, the business case for specifying a high-efficiency underfired broiler for Solo Burger primarily comes down to natural gas savings. An energy efficient broiler can save Solo Burger an estimated $438 in energy costs per feet of broiler per year. Or **$3,942 in total natural gas savings per year** for three 3-foot underfired broilers. The energy efficient broiler can also afford some ancillary cooling savings as it will reduce the heat load to the kitchen space due to its lower energy input than the standard broiler.

OPEN VAT FRYERS

Fryers are often the biggest revenue generators for "burger-and-fries" operations. A well-performing fryer can be the difference between a stressful, limited service and a smooth, scalable operation. There are many types of fryers, including open vat, pressure, and donut fryers. This section will focus on open vat fryers, as they are the most practical choice for a craft burger joint like "Solo Burger."

OPEN VAT FRYER SUMMARY

Cooking Method	Controls	Burner Types	Configurations	Vat Capacity	Temp Range	Ideal "Burger-and-Fries" Application
Convective heated oil /shortening for deep frying	• Manual • Digital • Touchscreen Programmable Controls	• Atmospheric • Infrared • Power Burner Systems	• Countertop • Freestanding • Multi-vat	15-lb to 200-lb	325°F to 375°F	French Fries; Onion Rings; Tater Tots

- Energy-efficient fryers:
  - Reduce cook times
  - Recover to temperature setpoint faster than standard fryers
  - Increase production capacity
  - Reduce energy use during non-cooking periods, which may make up most of a service day
- Advanced heat exchangers and/or burner designs (IR, powered, recirculation tubes/baffles, etc.) helps to optimize performance, reduce energy use, and support increasing demand without needing to specify a fryer with a larger physical footprint
- Consider an efficient shallow vat fryer with low oil volume for french fry-only applications
- Consider an efficient standard vat for higher-volume applications with various fried food types

- Automated fryer features like autofill, basket lifts, and filtration systems can help minimize the burn and slip risk of staff handling hot oil

- Advanced intelligent controls stabilize cooking processes and can store product-specific cooking parameters
- Advanced controls may help reduce labor, minimize training, and enable the operator precise control over quality/consistency
- Features that help minimize labor and training include:
  - Built-in autofill systems to replenish lost oil
  - Automatic basket lifts to simplify the frying process
  - Built-in oil filtration systems to reduce oil replacement frequency

- Specifying a smaller number of fry vats may be possible for the same volume needs
- Built-in oil filtration systems can extend oil life, saving on operating costs

A NOTE ON OIL MANAGEMENT

Effective oil management is essential for maintaining food quality, controlling costs, and improving kitchen safety. Regular oil filtration removes food particles that may cause degradation, extending oil life and reducing replacement frequency. Fryer models with built-in oil filtration systems streamline the process, encouraging frequent oil filtration without disrupting operations. These systems reduce training time and promote staff compliance with best practices.

An oil life study by SoCalGas demonstrated that energy-efficient fryers may save up to three jibs[8] of oil per month over standard efficiency fryers. Pair an energy efficient fryer with a filtration system and operators may realize about half the oil usage of a standard fryer without filtration.

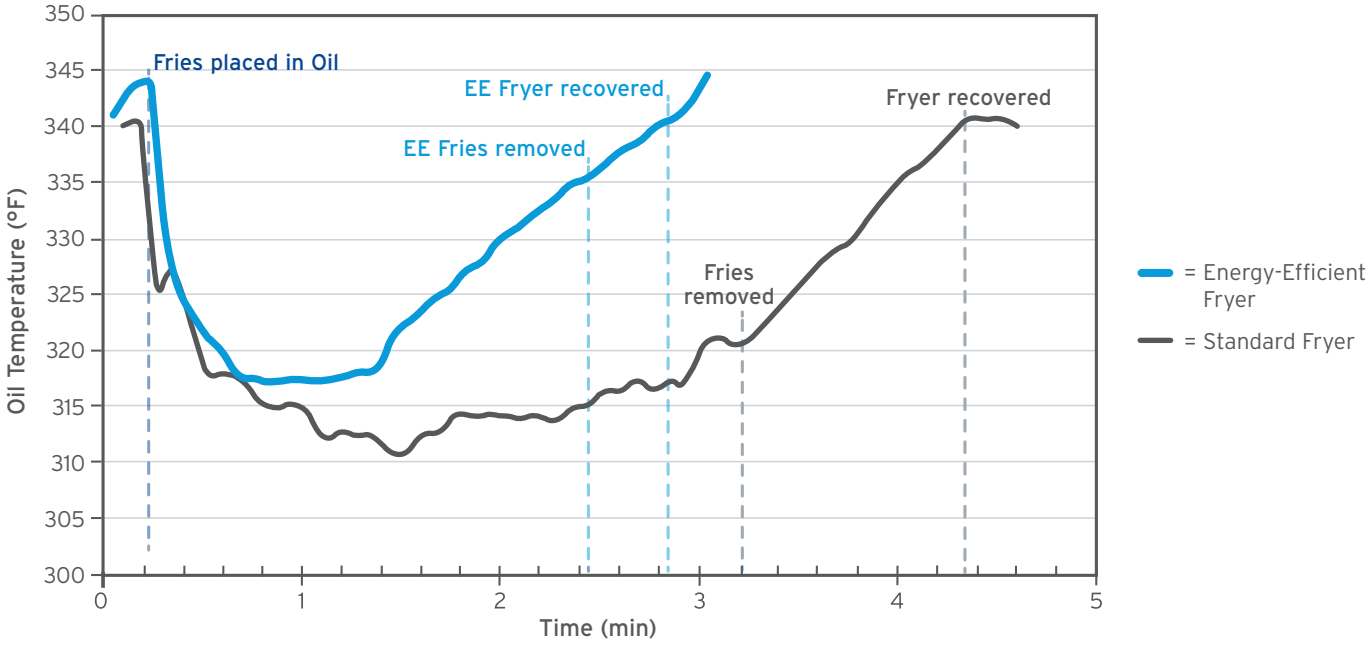
8. 1 jib = 1 standard container of fryer oil, used as a unit for tracking usage and cost.

Estimated Oil Cost Savings Comparison Example (per Vat)[9]

	Standard Efficiency, No Filtration	High-Efficiency with Filtration
Cost per Jib	$40	
Number of Jibs Used per Month	22.50	11.25
Annual Oil Costs	$10,800	$5,400
Annual Oil Cost Savings	-	**-$5,400**

9. Assumes $40/jib.

For high-volume kitchens, specialized oil services simplify oil handling by delivering fresh oil and removing used oil via centralized tanks. Though they involve added planning and cost, these services help cut labor, reduce waste, and further minimize the risk of injury from handling hot oil.



Energy-Efficient vs. Standard Fryer — Performance Comparison

The poor performance of the standard fryer results in a longer cook time and slower recovery to the setpoint temperature. The energy-efficient fryer recovers to temperature in less than 30 seconds and is ready to cook the next batch of fries before the standard fryer finishes cooking its first batch.

"SOLO BURGER" – Natural Gas Open Single Vat Fryer Energy & Oil Cost Comparison[10]

	Standard Efficiency	High Efficiency (Tier I)	"Super" High Efficiency (Tier II)
Vat Width	14" Single Vat		
Fuel	Natural Gas		
Daily Pounds of Fries Cooked	161		
Average Operating Hours	16 hours		
Operating Days per Year	365 days		
Idle Energy Rate (Btu/hr)	12,847	7,571	3,957
Cooking Energy Efficiency	37%	52%	61%
Capacity (lb/hr)	58	63	69
Therms per Year	1,581	1,052	779
Initial Cost	$2,090	$3,256	$11,558
Rebate	**N/A**	**$750[11]**	**$1,200[11]**
1st Year Total Cost	$3,904	**$4,084**	**$11,526**
1st Year Cost Premium	-	**+$180**	**+$7,622**
Annual Energy Cost	$2,371	**$1,578**	**$1,168**
Annual Energy Savings	-	**-$793**	**-$1,203**

10. Initial costs, performance data, and energy use calculations based on measure and base cases in the *California Statewide Measure Package SWFS011-07 Fryer, Commercial.* January 1, 2026. Natural gas rate of $1.50/Therm based on U.S. Energy Information Administration statistics.

11. Rebate amounts subject to change. Please visit caenergywise.com/rebates for the latest rebate program information.

"SOLO BURGER" – Natural Gas Fryer Labor Cost Comparison[12]

	Standard Efficiency	High Efficiency
Number of Fry Vats Needed to Meet Peak Demand	7	6
Peak Days – Cooks Needed	3	2
Peak Hourly Labor Cost	$57	$38
Peak Daily Labor Cost	$456	$304
Peak Annual Labor Cost	$47,424	$31,616
Number of Fry Vats Needed to Meet Non-Peak Demand	2	2
Non-Peak Days – Cooks Needed	1	1
Non-Peak Hourly Labor Cost	$19	$19
Non-Peak Daily Labor Cost	$152	$152
Non-Peak Annual Labor Cost	$39,520	$39,520
Weekly Labor Cost	$1,672	**$1,368**
Weekly Labor Cost Savings	-	**-$304**
Annual Labor Cost	$86,944	**$71,136**
Annual Labor Cost Savings	-	**-$15,808**

12. The values in this model are based on the average needs of the fictional Solo Burger restaurant and the production capacities of standard and high efficiency equipment. Assumptions include one fry cook per three fry vats and $19 labor cost per hour. Custom calculations determined by Frontier Energy's Labor Cost Model.

For Solo Burger, choosing a high-production, high-efficiency fryer might reduce the vats needed by one —from seven to six vats total—to provide the same french fry production. It is estimated, with one less fry vat to operate, Solo Burger will only need two cooks instead of three at the fry station during peak periods, resulting in annual labor savings of approximately **$15,808 per year**.

Additionally, Solo Burger could see an estimated annual natural gas savings of $793 per vat, or **$4,758 per year** for a six-vat fryer.

"SOLO BURGER" SUMMARY

"Solo Burger"	Griddle & Fryer Scenario				Broiler & Fryer Scenario			
	Standard		High Efficiency		Standard		High Efficiency	
	Griddle	Fryer	Griddle	Fryer	Broiler	Fryer	Broiler	Fryer
Labor Cost	$86,944	$86,944	$71,136	$71,136	$86,944	$86,944	$86,944	$71,136
Operating Cost	$9,036	$16,597	$3,497	$9,468	$19,710	$16,597	$15,768	$9,468
Annual Cost	$95,980	$103,541	$74,633	$80,604	$106,654	$103,541	$102,712	$80,604
Total Annual Cost	$199,521		$155,237		$210,195		$183,316	
Difference	-$44,285				-$26,879			
% Savings	22%				13%			

END OF SERVICE

The Solo Burger example demonstrates the ripple effects equipment selection can have on operations and revenue potential for a typical "burger-and-fries" operation. And it's not just energy savings. Energy-efficient equipment can streamline operations by maximizing kitchen space and minimizing labor. There are also more intangible benefits like limiting employee safety risks and time-loss incidents through intelligent control systems and automated cooking processes.

The elevated initial costs of advanced, high-efficiency equipment may be a burden, but the opportunity cost of choosing standard equipment could have long-lasting effects on operations with a potential for revenue loss.

And any cut corners in kitchen operations could come at the expense of the intended customer experience. For Solo Burger, the ~10–20% potential operation and labor cost savings could outweigh the initial cost premiums of high-efficiency equipment.

Solo Burger is one simplified example for the demonstration purposes of this guide—a more detailed and comprehensive examination is required for a real-world foodservice concept. But the business case for energy-efficiency remains clear. In an industry with razor thin margins, foodservice operators could be leaving money on the table by overlooking the operational benefits of high-production, high-efficiency foodservice equipment.

FOOD SERVICE EQUIPMENT CENTER

SoCalGas® Energy Resource Center &
Food Service Equipment Center
9240 Firestone Blvd.,
Downey, CA 90241

The Food Service Equipment Center, located at the Energy Resource Center in Downey, California is an industry-leading resource for any commercial foodservice customer. The center is the largest test kitchen for natural gas equipment in the country, offering visitors the opportunity to test and compare over 100+ pieces of natural gas equipment, attend seminars, learn about energy-efficient equipment, and which equipment qualifies for a rebate.

Learn more at **socalgas.com/business/education/food-service-equipment-center**

TRY BEFORE YOU BUY

SoCalGas offers a state-of-the-art Commercial Kitchen as well as a Ventilation and Bake Lab equipped with five different ventilation hoods, industry-standard bakery oven, and a rotating deck pizza oven. Bring your own recipes and ingredients to assess cooking quality, production, ease of operation and maintenance. Test out new features, compare operating costs and discover rebates on new energy-efficient, high-performance equipment. Test and compare more than 150 pieces of natural gas equipment from more than 50 manufacturers. As a brand neutral facility, we can help you understand the difference between available models.

To make an appointment, call **(562) 803-7323** or email **ercfoodsvc@socalgas.com**

EDUCATIONAL SEMINARS & WEBINARS

Attend our no-cost seminars and webinars on a wide variety of topics including food safety, kitchen ventilation, trends, equipment maintenance, kitchen remodels, sustainability for foodservice, and more.

Learn more and register at **seminars.socalgas.com**

EQUIPMENT REBATES

SoCalGas offers rebates on newly purchased select natural gas foodservice equipment that replace inefficient equipment. Rebates can help offset the purchase price of newer, high-efficiency models. Your operation may benefit from continued savings through lower operating costs year after year.

Learn more at **socalgas.com/business/savings/equipment-rebates**

This program is funded by California utility customers and administered by Southern California Gas Company (SoCalGas) under the auspices of the California Public Utilities Commission. Program funds, including any funds utilized for rebates or incentives, will be allocated on a first-come, first-served basis until such funds are no longer available. This program may be modified or terminated without prior notice. The selection, purchase and ownership of goods and/or services are the sole responsibility of the customer. Customers who choose to participate in this program are not obligated to purchase any additional goods or services offered by manufacturer, vendor, service provider, or any other third party. **SoCalGas makes no warranty, whether expressed or implied, including warranty of merchantability or fitness for any particular purpose, use or application of selected goods and/or services selected by customer. SoCalGas does not endorse, qualify, or guarantee the work of any third party.** Eligibility requirements apply; see the program conditions for details.

SoCalGas | 1-800-427-2000 | **socalgas.com**