



ENERGY STAR® FOR COMMERCIAL KITCHENS: HELPING CUSTOMERS MANAGE COSTS

Buildings with restaurants and other food service operations are very energy intensive, consuming roughly 2.5 times the energy per square foot as other commercial buildings, or close to 250,000 British thermal units (Btu) of energy per square foot.¹ Energy efficiency program administrators can help these customers rein in operating costs while also reducing energy use, peak demand, and water use by promoting ENERGY STAR qualified commercial food service (CFS) equipment and other best practices. Utility cost savings of 10 to 30 percent are achievable without sacrificing service, quality, style or comfort—all while making significant contributions to a cleaner environment.² The U.S. Environmental Protection Agency (EPA) is working with about 50 efficiency program administrators throughout the nation to integrate ENERGY STAR qualified CFS equipment into their program offerings. EPA is providing this fact sheet to introduce more program administrators to ENERGY STAR and the savings opportunities in commercial kitchens, as well as to share best practices for program design, implementation, and evaluation based on the experiences of recent CFS programs.

DELIVERING SOLUTIONS IN COMMERCIAL KITCHENS

Promoting the installation of energy-efficient equipment in commercial kitchens is an important part of a comprehensive CFS program. It saves significant amounts of energy and offers meaningful financial benefits to the establishment. Utility costs are a major operating expense for the CFS industry, on the level of about one-half to almost parity with their profit margins—which, for a full service restaurant, is around 5 percent of sales.³ Due to rising energy costs, CFS customers may be increasingly receptive to program administrator assistance for improving energy efficiency and reducing related utility bills. And the savings opportunities are significant: as much as 80 percent of the food service sector's \$10 billion annual energy bill is expended on energy that does no useful work and a substantial portion of this waste is related to equipment inefficiencies.⁴

ENERGY STAR provides a comprehensive and cost-effective platform for promoting greater equipment efficiency and related best practices to CFS customers. ENERGY STAR currently identifies efficient products in eight product categories: hot food holding cabinets, solid door refrigerators and freezers, fryers, steam cookers, ice machines, commercial ovens, griddles, and dishwashers.

These energy-efficient products offer energy savings of 10 to 65 percent over standard models, depending upon the product category. Three of the product categories, commercial dishwashers, ice machines, and steam cookers, also offer water savings of up to 90 percent over standard models. Three CFS utility programs have earned ENERGY STAR awards for promoting these energy-saving products and are showing promising early returns. They include:

- California's four investor-owned utilities (IOUs)—Pacific Gas & Electric Company (PG&E), Southern California Edison (SCE), Southern California Gas Company (SCG), and San Diego Gas & Electric Company (SDG&E)—offer a coordinated statewide incentive program with strong early results, achieving annual electric savings of around 20.6 million kilowatt-hours (kWh) and annual natural gas savings of around 526,000 therms.⁵
- The Energy Trust of Oregon's (ETO) CFS program is achieving annual savings of nearly 1.2 million kWh and over 190,000 therms by partnering with dealers that sell CFS equipment directly to restaurants.⁶
- Wisconsin's Focus on Energy offers CFS customers a bonus incentive to encourage the purchase of multiple ENERGY STAR qualified products and is achieving annual electric savings of nearly 350,000 kWh and annual natural gas savings of nearly 22,000 therms.⁷

Outfitting an entire commercial kitchen with a suite of ENERGY STAR qualified equipment could save around 300 million Btus of energy and about \$3,600 per year.

PROGRAM DESIGN AND IMPLEMENTATION

A key factor in effective program design is understanding the market barriers to greater adoption of energy-efficient equipment and developing strategies to overcome these barriers. Common barriers in the CFS market include:

- **Hard-to-reach market**—The CFS market is highly fragmented, both in terms of equipment supply channels and end use sectors.
- **Lack of readily available supply**—CFS equipment suppliers typically compete on low prices and therefore stock only a limited supply of energy-efficient products. This barrier is compounded by customers who make short-term purchasing decisions due to the need to replace equipment quickly when it fails.
- **Incremental costs**—ENERGY STAR qualified CFS equipment is generally more expensive than standard efficiency equipment and can cost significantly more than refurbished models sold in the used equipment market.
- **Lack of knowledge**—Equipment suppliers and end users might not be aware of energy-efficient products, might have misperceptions about tradeoffs between energy efficiency and performance, or both.

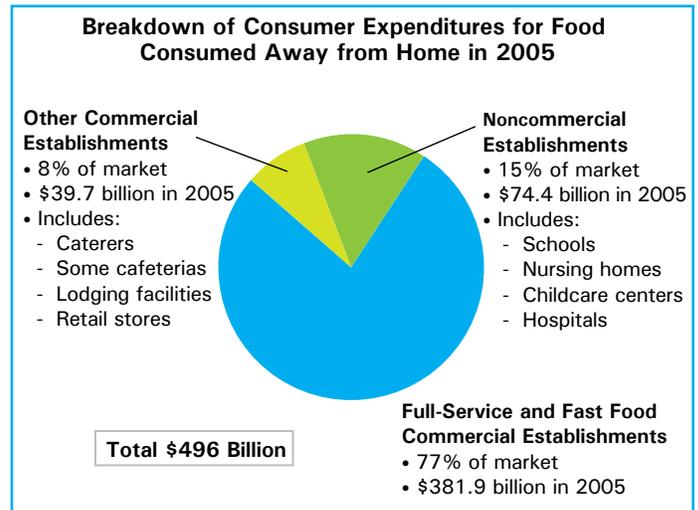
The following sections describe the CFS equipment market in further detail and discuss program strategies for addressing the key barriers listed above.

Understanding and Engaging the CFS Market

Foodservice establishments include commercial and noncommercial entities, diverse business sectors, and account for approximately \$500 billion in expenditures for food consumed away from the home (e.g., meals and snacks for on-premise or immediate consumption). Commercial establishments—including full service restaurants, fast food outlets, caterers, some cafeterias, lodging facilities, and retail stores—account for about 85 percent of this total with full-service restaurants and fast food restaurants representing the two largest industry segments, accounting for 77 percent of expenditures for food consumed away from the home. Noncommercial foodservice operators—those that prepare and serve food as an adjunct service in institutional settings (e.g., schools, nursing homes, childcare centers, and hospitals)—account for the remaining 15 percent.⁸

In addition to the diverse business sectors that comprise the foodservice industry, the CFS equipment market is complicated by multiple equipment distribution channels including:

- Dealers that primarily sell to individual restaurants.
- Distributors that primarily supply bulk quantities to equipment dealers and sell commodity equipment (e.g., ice machines, counter-top fryers) directly to end users.



Source: Adapted from U.S. Department of Agriculture Economic Research Service, Briefing Room: Food Marketing System in the United States.

- Manufacturers that sell through manufacturer representatives (reps) but may also sell directly to large end users such as national restaurant chains.
- Consultants that assist in either designing new or renovating existing commercial kitchens, typically working with restaurant chains, hotels, hospitals, and universities.

(Additional information on supply channel actors and strategies for influencing them can be found in the text box on page 3).

Due to the complexity of the CFS market and potential for widespread variability between service territories, program administrators should consider conducting a market assessment to: 1) understand the major sectors and primary distribution channels influencing the CFS equipment market in their territory, 2) develop estimates of likely program uptake for each sector

ITW Food Equipment Group

2008 and 2009 ENERGY STAR Partner of the Year, ITW Food Equipment Group (ITW FEG)—the parent organization of independent companies such as Hobart, Stero, Vulcan, Traulsen, and Wittco—understands the importance of supporting customers in their drive to cut costs, use less water and consume less electricity, and has responded by offering 381 ENERGY STAR qualified CFS products.

“ENERGY STAR plays an important role in helping foodservice operators and food retailers design a sustainable kitchen that’s good for the environment and good for business in terms of efficiency, productivity and quality...Our partnership with ENERGY STAR enables us to emphasize the value of selecting equipment engineered for high efficiency and low water consumption.”

—John McDonough, President of ITW FEG

taking into account the uniqueness of each sector (e.g., while restaurants are often the largest segment, they are often the hardest segment to influence), and 3) establish program baseline conditions (e.g., what is the current market share for an efficient product, and what is the best estimate of market share over time absent a program). See related discussion under Measurement and Verification, page 7.

Another key best practice is to engage equipment suppliers and other key stakeholders, such as large and small restaurant customers and their trade associations, during program design. Engaging stakeholders early in the planning process can help program administrators better understand stakeholder business models and gauge receptivity to potential education, marketing, and incentive strategies.

Continuing this dialogue during program launch, particularly with supply-side market actors, is essential to ensuring that manufacturer reps, distributors, dealers, and businesses are familiar with program incentives, policies and procedures, and are able to effectively communicate the key benefits and features of qualified energy-efficient equipment to their customers. During these meetings, it is important to communicate both the mechanics of how the CFS program works and the business benefits of program participation.

An ENERGY STAR qualified commercial refrigerator can save a restaurant around \$200 on energy costs per year. This may not seem like much until one considers the slim profit margins in the restaurant industry. If a restaurant operates with a profit margin of around 5 percent (the industry average), it will need to make roughly \$4,000 in sales to earn \$200 in profit.

Improving Availability of ENERGY STAR® Qualified Equipment

In the retrofit market, purchasing often occurs when existing equipment fails, and the top priority is getting new equipment online quickly. Decisions on product selection and purchase are usually driven by product availability, price, and advice from the equipment supplier. Unfortunately, many suppliers do not stock or promote efficient equipment due to price premiums that range from 10 to 85 percent, depending on product category.

The following are important strategies for motivating suppliers to sell and stock ENERGY STAR qualified equipment:

Make the business case—It is important to educate suppliers on the value proposition for promoting ENERGY STAR qualified CFS equipment to their customers. While efficient equipment may have

Supply Channel Actors

Dealers—Dealers primarily sell to individual restaurants, which is often the most difficult market to reach. Smaller dealers may join buying groups so they can compete more effectively with larger dealers. Many dealers display their products in showrooms and tend to stock lower-priced, popular models that are usually not energy-efficient. A dealer's main objective is usually to sell the products they have on hand, and they are generally more interested in attracting customers with low prices rather than emphasizing the overall value of higher-end products (e.g., lifetime cost savings). Given that many manufacturers offer sales incentives to move lower-end models, dealer incentives can be an effective strategy to promote stocking and sales of energy-efficient equipment.

Distributors—Distributors primarily supply bulk quantities of equipment to dealers and sell commodity equipment (e.g., ice machines, fryers) directly to end users. Since distributors usually supply dealers, developing a good working relationship with distributors helps funnel energy-efficient CFS products into dealer showrooms. In addition, some restaurant food distributors sell CFS equipment and should also receive program outreach.

Manufacturers and Reps—CFS equipment manufacturers generally sell through product reps, although manufacturers may also sell directly to large end users such as national restaurant chains. Though all supply channels gravitate toward inexpensive, fast-moving pieces of equipment, a key value proposition for engaging reps is the up-sell potential of high-value, high-efficiency equipment. Sales of high-quality products earn reps a higher commission and generate long-term value for the customer, often leading to repeat business.

Design Consultants—Design consultants assist in the planning and design of new or renovated commercial kitchens, typically working with large or chain-owned restaurants, hotels, universities, and hospitals. Conducting targeted outreach to design consultants helps to ensure that energy- and water-efficient CFS equipment is considered in these types of projects. Design consultants are typically focused on the overall design and aesthetics of the space and controlling project costs, and back-of-the-house equipment is often a low priority. In addition, they often have established relationships with buying groups and may receive incentives for selling lower-end equipment. Equipment quality and performance are key selling points for engaging design consultants.

a higher first cost, it costs less to operate. With today’s rising energy costs, efficient equipment will continue delivering dividends through lower utility bills for years to come. It is also important to highlight non-energy benefits of efficient products such as water savings, reduced noise, reduced waste heat, and other quality and performance features. Businesses that can effectively up-sell higher-end equipment can increase their bottom line.

Sales incentives—Upstream incentives, including salesperson incentives or “spiffs,” can be effective at motivating equipment suppliers to promote the multiple benefits of energy-efficient products, rather than steering customers to low-cost products, which is the norm. Puget Sound Energy (PSE) offers a \$30 “spiff” for each completed incentive application submitted by an equipment supplier; San Diego Gas & Electric Company (SDG&E) offers a \$25 spiff.

Program Highlight

Puget Sound Energy’s \$30 spiff rewards equipment suppliers for submitting completed incentive applications to the utility for processing on behalf of the customer. The supplier discounts the purchase price by the amount of PSE’s customer rebate, so the customer receives an incentive at the point-of-purchase. Suppliers are reimbursed for the amount of the customer rebate, and get the \$30 reward for their time and effort. This approach has led to higher turn-in rates for incentive applications, and fewer paperwork errors.

Provide program information—Providing easy access to up-to-date information about program offerings and procedures is essential to engaging and maintaining effective trade ally relationships. Initial kick-off workshops provide an opportunity to discuss the benefits of ENERGY STAR qualified CFS equipment and to inform participants of program requirements and incentive offerings. Conducting regular visits to trade ally showrooms/offices to discuss the program and distribute educational literature, point-of-purchase marketing materials, and incentive applications are also highly effective strategies for keeping trade allies informed. Other best practices include establishing a dedicated Web site and distributing electronic newsletters to keep equipment suppliers updated on program activities.

Offering Customer Incentives to Overcome First-Cost Barriers

The incremental cost of some ENERGY STAR qualified equipment can be a significant barrier to purchasing products. In general, the incremental cost is highest for fryers and hot food holding cabinets; moderately high for commercial dishwashers,

refrigerators and freezers, and ice machines; and lowest for steam cookers.

Equipment rebates—To overcome the significant barrier of incremental cost, the majority of CFS programs offer prescriptive rebates for the purchase of qualified equipment. Program administrators typically set incentive levels at 50 percent or less of the incremental cost of purchasing the ENERGY STAR qualified model versus a standard efficiency model. There is, however, no set formula for success when choosing equipment rebate levels, and CFS programs are achieving success with a range of levels. As of August 2008, the following incentive ranges were available from the online ENERGY STAR CFS equipment incentive finder tool.

Table 1: Range of Incentives Offered by Program Sponsors (as of 5/09)*

Product	Incentive Range
Fryers	\$150–\$1,000
Hot food holding cabinets	\$200–\$500
Refrigerators and freezers	\$50–\$500
Steam cookers	\$200–\$1,500
Ice machines	\$50–\$600
Commercial dishwashers	\$200–\$2,000

Some programs, like Wisconsin’s Focus on Energy, promote comprehensive kitchen efficiency upgrades by offering bonus incentives for the purchase of two or more pieces of qualified equipment. The customer is eligible for the usual per-unit equipment incentive, plus an additional \$100 if they purchase two or more pieces of qualifying equipment, or \$300 if they purchase three or more pieces of eligible equipment at a time. This strategy can be particularly effective when targeting commercial kitchen renovation and new construction opportunities.

The following are common best practices related to incentives:

- Tie incentive levels to ENERGY STAR specifications whenever possible to help customers easily identify products that qualify for rebates and to take advantage of the growing consumer awareness, market momentum, and supporting infrastructure provided by the program.
- Keep incentive application processes simple and straightforward.
- Maintain relatively consistent incentive levels from year to year, trending downward as market penetration increases.
- Ensure suppliers and buyers have easy access to a list of qualified models and related incentive levels. ENERGY STAR qualified product lists are available on each of the specific

* Note: data include some programs offering incentives for equipment achieving higher efficiency levels than ENERGY STAR.

product pages at www.energystar.gov/cfs. The California IOUs, which offer incentives for CFS equipment beyond ENERGY STAR qualified products, provide an online list of qualified equipment through PG&E's Food Service Technology Center (FSTC).

- Promote program and incentives through the online ENERGY STAR CFS equipment incentive finder tool (www.energystar.gov/CFSrebate_locator).
- Educate customer call centers about program offerings, procedures, and where to direct customers for additional information.

Audits—Offering free or reduced-cost audits for commercial kitchen facilities is another form of incentive that can be useful for helping customers, particularly regional and national franchise chains, identify and correct operational inefficiencies, and for encouraging customers to take advantage of program rebate offerings when equipment purchases are needed. Customers are more likely to make smart decisions about CFS appliances if they have time to research options and secure the necessary capital to purchase new equipment. Many utilities offer audits to national restaurant chains as part of the menu of services they receive as managed accounts, and offer a higher level of support in helping such customers specify efficient equipment options for their facilities.

Audits can be offered for a nominal fee or at no cost to the customer. Some programs make a free audit contingent upon implementation of a minimum number of energy- and water-saving recommendations. Immediate energy savings benefits can be achieved by conducting direct installation of low-cost measures (e.g., high-efficiency pre-rinse spray valves, gaskets on refrigeration equipment, or compact fluorescent light bulbs).

Audits help to develop the customer relationship, increasing the likelihood that the customer will take advantage of program offerings when it comes time to replace equipment or conduct comprehensive facility upgrades. To ensure that the program is viewed as a credible resource, it is critical that auditors be knowledgeable about the unique challenges and business realities of CFS operations, and deliver realistic recommendations. A recent evaluation of the PG&E's FSTC found that in order to deliver the most value to food service operators, audit reports should include detailed information on costs and savings associated with the recommended improvements.⁹

Program Highlight

To effectively serve the diverse set of CFS market participants, the programs sponsored by the **California IOUs** offer an array of services, including site audits, equipment testing, and new restaurant plan review, as well as regular energy efficiency seminars for food service professionals.

Educating the Marketplace

Lack of knowledge about efficiency opportunities among end users and equipment suppliers, as well as misperceptions about tradeoffs between efficiency and performance, continue to inhibit greater adoption of energy-efficient equipment in the CFS market, despite improvements in this area since EPA introduced ENERGY STAR specifications for a variety of CFS products—as of May 2009, there are more than 98 ENERGY STAR CFS manufacturing partners and 2,600 qualified CFS products on the market.

The following strategies have been effective for getting information to end users to overcome these barriers:

Target marketing—Program information needs to be timely and relevant in order to motivate consumers to take action. For this reason, program administrators often develop targeted marketing strategies and messaging for each major market segment they are trying to reach—restaurants, hotels, schools, hospitals, etc.—taking into account business cycles and major industry events in timing promotions and outreach.

Training and equipment demos—Equipment suppliers may have little experience selling energy-efficient equipment, and they and their customers may be confused by different efficiency claims in the market or think energy efficiency comes with a tradeoff in productivity or product features. Equipment demonstrations and hands-on training can be particularly effective for persuading consumers that ENERGY STAR qualified CFS equipment comes with no tradeoffs in features or performance. Some programs have dedicated demonstration facilities for this purpose, while others work to assist suppliers in developing their own equipment demonstrations.

- PG&E's FSTC evaluation found that training seminars were a good way to build relationships with food service operators, leading to energy savings impacts over time.¹⁰
- New York State Energy Research and Development Authority's (NYSERDA) Small Commercial Kitchen Pilot successfully used cooperative marketing dollars to assist suppliers in developing their own equipment demonstrations (see text box on page 6).
- ETO gives an annual 45 minute sales training to CFS dealers to ensure sales staff understand the energy, monetary, and ancillary benefits of ENERGY STAR qualified CFS equipment.

Cooperative marketing—CFS programs create opportunities for cooperative advertising, showroom promotions and other collaborative marketing efforts with equipment suppliers. Programs often provide collateral marketing materials such as point-of-purchase banners, tags or stickers to identify rebate-eligible equipment, and informational flyers and brochures. Providing cooperative advertising funds is also an effective approach as it allows businesses the flexibility to market and advertise their ENERGY STAR qualified products in a way that is best aligned with their business model. For example, equipment suppliers that join

Program Highlight

ETO developed a highly successful document modeled after CFS dealers' handbooks (folders with equipment specification and sell sheets) that dealers take with them on the road. The handbooks contain all the relevant information that a dealer would need to sell ENERGY STAR equipment, such as:

- What is energy efficiency
- What is ENERGY STAR
- List of incentives available in Oregon
- A territory map showing where incentives are available
- Qualified product lists
- Tables listing the energy, water, and monetary savings for energy-efficient equipment (e.g., fryers, ice machines, refrigerators)
- Ancillary benefits of ENERGY STAR equipment
- Incentive application forms

Alliant Energy's trade ally network can be reimbursed for up to 50 percent of the cost of cooperative advertising, subject to utility pre-approval and other minimum requirements. For CFS products that save energy and water—commercial dishwashers, ice machines, and steam cookers—a growing number of energy and water utilities are pursuing opportunities for cooperative marketing, joint program implementation, or both.

Trade association outreach—CFS programs can leverage existing trade association networks to raise awareness of program opportunities and boost participation by customers and suppliers. Program administrators should consider joining the local restaurant association and trade associations serving food service equipment suppliers, as well as state restaurant associations. Membership in these organizations will keep program managers abreast of developments in the industry and alert them to outreach opportunities available through trade shows, meetings, and monthly publications. Informational seminars, industry conferences, and well-crafted articles are excellent ways of reaching service decision-makers. At these events, program administrators can also conduct informational seminars and display information and materials to publicize CFS program offerings.

Communications and outreach—A robust communications plan utilizing multiple channels including newsletters, targeted mailings, personal contact, seminars, and electronic communications increases awareness of program opportunities. Personal contact (i.e., "face time") is extremely important for implementing a successful program. Energy efficiency is a new concept in the CFS market and supply channel actors often need additional support from utilities before stocking, promoting, and selling energy-efficient CFS equipment. Program administrators can contact ENERGY STAR for assistance in identifying trade allies and developing outreach materials.

Program Highlights

1) **CenterPoint Energy (MN)** uses its Commercial Food Service Learning Center in Minnesota to provide hands-on education to trade allies about the benefits of high-efficiency equipment. CenterPoint is also a member of several food service trade associations and regularly attends the **Upper Midwest Restaurant Show**.

2) Distributor **Saratoga Restaurant Equipment Sales (SRES)** leveraged cooperative marketing opportunities through **NYSERDA's Small Commercial Kitchen Pilot** and increased sales of qualified equipment by 50 to 900%, depending on the product. Promotional efforts included a showroom event and equipment demonstration, hang tags on qualified equipment, and direct mail. SRES also streamlined the application process by filling out rebate paperwork on the customer's behalf.

3) As part of their program outreach activities, the four **California IOUs** attend the annual **Western Food Service and Hospitality Expo** in Los Angeles. The show is a great way for California program sponsors to engage with trade allies and to reach their key audience: restaurants.

Motivating Behavior Change and Continuous Energy Performance Improvement

In addition to purchasing energy and water efficient equipment, there are a number of operational best practices that program administrators can share with food service operators. The ENERGY STAR Restaurant Guide provides both short- and long-term recommendations for saving energy in commercial kitchens, equipment use and maintenance tips, and general energy savings tips, in addition to outlining the benefits of energy-efficient equipment installation. Program administrators can use this guide as part of education efforts with commercial kitchen customers to promote additional savings. EPA's Portfolio Manager tool can also be used to obtain a weather-normalized energy performance benchmarks for buildings, assisting food service operators in tracking their building's energy use and reducing it over time.

EPA also works cooperatively with the Consortium for Energy Efficiency (CEE) Commercial Kitchens Initiative. CEE is a nonprofit corporation whose membership includes utility, state, and nonprofit administrators of energy efficiency programming. The goal of the initiative is to define a high performance commercial kitchen package that CEE members can deliver to customers in targeted CFS sectors. A bundled whole-kitchen approach may be particularly appropriate for new construction or major renovation projects. For more information, please visit: www.cee1.org/com-kit/com-kit-main.php3

Program Highlight

PG&E has developed a Food Service Edition of the Smart Business Rebate Booklet identifying over \$6,000 in rebates for the food service industry. The booklet provides information on nearly two dozen ways that PG&E can help customers save energy in commercial kitchens. The booklet tells customers how to apply for rebates, how to access education and training through PG&E's Food Service Technology Center, and how to develop an energy management plan using PG&E's online tool, SmartEnergy Analyzer™.



rebate activity by customer type (restaurant, hospitality, etc.); trade ally participation; and program costs.

Incentive applications are an important source of information for collecting basic information not only to justify rebate payment, but also to inform future program impact evaluation. The following are commonly required inputs:

- Customer contact information
- Equipment cost
- Type of facility (restaurant, hotel, etc.)
- Number of qualified units installed
- Equipment type
- New installation or retrofit
- Manufacturer
- Proof of purchase (including serial number)
- Model number
- Trade ally contact information (if trade ally incentives are offered)

MEASUREMENT AND VERIFICATION

Measurement and verification (M&V) are central to the success of energy efficiency programs, and are used to assess the market during program design, monitor program performance during program implementation, validate program impacts, and justify continued investment in a program.

During the program planning and design phase it is important to establish a baseline and capture important data before it is lost.

Baseline Assessment

During the program planning process, it is useful to develop a baseline market assessment of the energy savings potential from commercial kitchens. This baseline will allow program managers to set realistic savings goals and design programs that are well-suited for the target market. Understanding market potential and the market penetration of energy-efficient CFS equipment is well worth the effort, providing valuable insights into how the program should be delivered, and what incentive levels would be cost-effective and successful at moving the market.

Many program administrators quantify kWh savings potential by customer segment. Some market assessments employ a survey process to develop baseline assumptions. At a minimum, a market assessment will identify the number of independently owned and franchised restaurants, hospitality businesses, and large institutional users of CFS equipment (e.g., hospitals, schools, prisons) within the service territory, and provide general information on the baseline equipment installed in such facilities. Growth projections for key end-use sectors and annual run time for qualified equipment are also useful metrics to include.

Program Tracking

Developing and maintaining a program tracking system is important for measuring program progress and tracking energy savings. Program administrators have found the following indicators useful in tracking program performance over time: energy savings (kWh and kW) from approved incentive applications; level of rebate activity by product type; level of

It is important to keep in mind the significant lag time between implementing a program and achieving program results. According to PG&E, CFS incentive programs take approximately 12 months to demonstrate changes in equipment stocking, selling, and purchasing behavior.

Process and Impact Evaluation

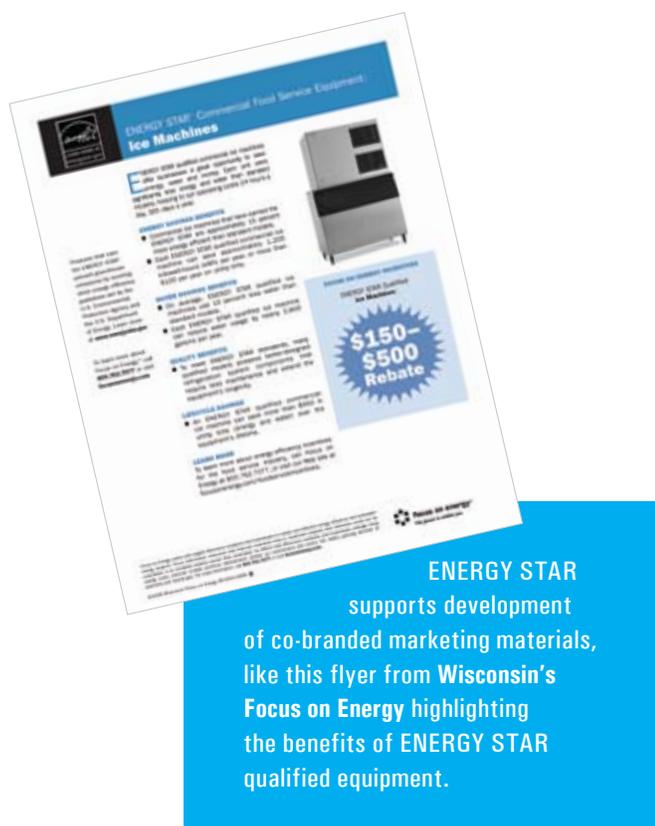
CFS programs are typically subject to two types of evaluations: process evaluation and impact evaluation. Process evaluations review program design and implementation to assess what elements of the program are working well and identify opportunities for improvement. Impact evaluations estimate the energy and demand savings that directly result from a program. The Model Energy Efficiency Program Impact Evaluation Guide, a resource of the National Action Plan for Energy Efficiency, is a useful resource for learning more and is available at www.epa.gov/cleanenergy/documents/evaluation_guide.pdf

PROGRAM COST EFFECTIVENESS

ENERGY STAR qualified CFS equipment provides substantial savings opportunities for program administrators. While CFS programs can be operational within a two to four month period, given the diffuse nature of the distribution and purchasing patterns associated with this equipment, seeing significant progress in terms of program participation may take as long as one year.

Measure-level cost-effectiveness analysis, conducted during program planning, requires data on incremental measure cost, per-unit savings (kW, kWh, therms), annual hours of operation, and measure life. Program administrators typically base hours of operation assumptions on the type of facility where the equipment is installed (e.g., full service restaurant, quick service restaurant, hospital, school). As refrigeration measures are weather-sensitive,

Figure 1: Example of Co-Branded Marketing Document



savings assumptions may vary based on the climate zone where the equipment is installed.

Measure-level data are available from a number of public sources, including the following:

- The Database for Energy-efficient Resources (DEER), maintained by the California Energy Commission and California Public Utilities Commission: www.energy.ca.gov/deer
- Program work papers filed by the California IOUs, available through the Energy Efficiency Groupware Application: <http://eega2006.cpuc.ca.gov>
- PG&E's FSTC Web site: www.fishnick.com
- NYSERDA also has a Deemed Savings Database, available by request

Table 2 presents program administrator cost (PAC) effectiveness results for three existing programs that provide incentives for ENERGY STAR qualified CFS equipment. These calculations only include the equipment incentive and administrative costs, but are estimated for the useful life of the equipment and discounted to net present value using 7 and 9 percent discount rates.

Program administrator costs are different, and usually lower than, total resource cost (TRC), which include the end users' marginal cost for purchasing energy-efficient equipment. For example, PG&E's PAC cost per kWh is estimated at \$0.04 for both 7 and 9 percent discount rates; TRC is estimated

Table 2: Estimated Program Cost Effectiveness for Three Utilities*

	Pacific Gas & Electric Company ¹¹ (PG&E)	Southern Minnesota Municipal Power Agency ¹² (SMMPA)	Energy Trust of Oregon ¹³ (ETO)
Implementation Period (years)	2.75	2.00	4.00
Implementation Dates	01/06 to 09/08	05/06 to 05/09	05/05 to 04/09
Total Rebated Units	3,026	60	4,757
Gas	858	7	2,601 [†]
Electric	2,168	53	2,156
Total Therms Saved	490,625	1,402	458,970
Total KWh Saved	13.3 million	183,147	3.4 million
Levelized CCE - Natural Gas (\$/Therm) ^o	\$1.06 – 1.18	\$1.54 – 1.70 ^o	\$0.44 – 0.47 ^{o,†}
Levelized CCE - Electricity (\$/kWh) ^o	0.04	\$0.01 ^o	\$0.10 – 0.11 ^o

* Levelized Cost of Conserved of Conserved Energy (CCE) estimates using the Program Administrator Cost Test (also known as the Utility Cost Test).
o Levelized CCE is presented using a range for discount rates of 7% and 9%.
o Administrative costs: for ETO and SMMPA an administrative cost of 11% was used in calculating CCE based on a published cap on administrative costs from the Oregon Public Utility Commission (www.energytrust.org/who/090323_Facts_EnergyTrust.pdf). PG&E data includes administrative costs supplied by the utility in program files and imbedded in measure level estimates.
† Includes 2,202 low-flow pre-rinse spray valves (PRSVs) provided free of charge to restaurants by ETO.

between \$0.12 and \$0.13 per kWh for the same discount rates (9 and 11 percent respectively).¹¹ The difference between these two estimates is the end users' added costs for purchasing the equipment. Utilities should analyze both PAC and TRC when deciding what types of equipment to incentivize.

ENERGY STAR SUPPORT FOR CFS PROGRAMS

In order to take full advantage of the ENERGY STAR platform for CFS programs, program administrators sign an ENERGY STAR Partnership Agreement with the government. The ENERGY STAR Program has an established national network of program administrators, equipment manufacturers, and marketing support firms that can provide advice and technical assistance during program start-up and implementation. Examples of support and resources include:

- **Specifications**—ENERGY STAR specifications currently cover six CFS equipment types, with new product categories evaluated every year. Information on new specifications and revisions to existing specifications is available at www.energystar.gov/productdevelopment.

Figure 2: Example of Co-Branded Incentive Booklet



Be creative when publicizing your programs! Southern Minnesota Municipal Power Agency created the Food Service Equipment Rebate booklet to showcase the comprehensive incentive program they developed for their 18 Member utilities. The booklet includes information on the utility's CFS equipment rebates, emphasizes ENERGY STAR's role in CFS market transformation, and provides product- and market-specific information for end users.

The Food Service Equipment Rebate booklet is available at: <http://www.SaveEnergyInBloomingPrairie.com/Upload/FoodServiceBooklet.pdf>

- **Marketing tools and resources**—Downloadable logos, equipment-related information, and educational tools like the ENERGY STAR Guide for Restaurants allow program administrators to customize a variety of marketing and informational materials, while using high-quality ENERGY STAR graphics and language that effectively describes how ENERGY STAR works in commercial kitchens (see figure 1 and 2).
- **Training resources**—A variety of materials are available to support program training activities, including customizable train-the-trainer presentations and opportunities for online or in-person training conducted by PG&E's FSTC (minimum participation requirements apply).
- **Partner matchmaking**—ENERGY STAR facilitates contacts between energy efficiency program administrators and manufacturers, equipment suppliers, and restaurant associations to support program marketing and outreach.
- **Savings calculators**—Spreadsheet tools estimate lifecycle energy, water, and cost savings for each category of ENERGY STAR qualified CFS equipment and are available at www.energystar.gov/cfs by clicking on the relevant product page.
- **Manufacturer and product lists**—Regularly-updated lists of equipment models that have earned the ENERGY STAR support rebate verification activities and are available at www.energystar.gov/cfs by clicking on the relevant product page.
- **Best practices tools**—Spreadsheet tools for quick service restaurants and full service restaurants estimate lifecycle energy and cost savings from additional energy-efficient food service equipment categories not currently covered by ENERGY STAR, and are available at www.energystar.gov/cfs.
- **CFS Equipment Incentive Finder**—Online database of available rebates for qualified equipment is searchable by zip code or by product type and is available at www.energystar.gov/CFSrebate_locator.
- **CFS Program Guide**—Regularly-updated publication informs food service equipment suppliers about cross-promotional opportunities available through efficiency programs.
- **CFS newsletter**—Bimonthly electronic publication is distributed to industry associations, equipment suppliers, and efficiency program administrators highlighting efforts to promote ENERGY STAR qualified CFS equipment.
- **Case studies**—Success stories highlight commercial kitchens saving energy and money by leveraging energy efficiency programs and purchasing ENERGY STAR qualified equipment.

RESOURCES FOR ADDITIONAL INFORMATION

The following links are useful resources for energy efficiency program administrators that would like to learn more.

- ENERGY STAR for Commercial Food Service: www.energystar.gov/cfs

- ENERGY STAR for Restaurants: www.energystar.gov/restaurants
- ENERGY STAR Purchasing and Procurement with Product Savings Calculators: www.energystar.gov/purchasing
- ENERGY STAR Small Business Network: www.energystar.gov/smallbiz
- CEE Commercial Kitchens Initiative: www.cee1.org/com/com-kit/com-kit-main.php3
- PG&E's FSTC: www.fishnick.com
- GasNetworks: www.gasnetworks.com/efficiency/pdf/Fryer_Rebate_Form_07_08.pdf
- Green Restaurant Association: www.dinegreen.com
- National Restaurant Association: www.restaurant.org
- National Restaurant Association Conserve Initiative: www.conserve.restaurant.org
- North American Association of Food Equipment Manufacturers (NAFEM): www.nafem.org

PROGRAMS PROMOTING ENERGY STAR QUALIFIED CFS EQUIPMENT

Selected efficiency programs offering rebates for ENERGY STAR qualified CFS equipment include:

- Avista Utilities: www.avistautilities.com/business/rebates/washington_idaho/Pages/incentive_7.aspx
- The Energy Trust of Oregon: www.energytrust.org/buildingefficiency/restaurants.html
- MidAmerican Energy: www.midamericanenergy.com/kitchen
- New York State (NYSERDA): www.nyserda.org/Commercial/Industrial/CommercialKitchens/default.asp
- Pacific Gas & Electric Company: www.pge.com/mybusiness/energysavingsrebates/incentivesbyindustry/hospitality
- Puget Sound Energy: www.pse.com/solutions/forbusiness/pages/comRebates.aspx?tab=4&chapter=4
- San Diego Gas & Electric Company: www.sdge.com/foodservice
- Southern California Edison: www.sce.com/RebatesandSavings/SmallBusiness/ExpressEfficiency/FoodServiceEquipment
- Southern Minnesota Municipal Power Agency (SMMPA): www.smmmpa.org/members.asp?utility=59&service=326
- Wisconsin's Focus on Energy: www.focusonenergy.com/foodserviceincentives

SOURCES

- 1 Consortium for Energy Efficiency. Commercial Kitchens Fact Sheet. Available at: www.cee1.org/resrc/facts/comkit-fx.pdf
- 2 PG&E Food Service Technology Center.
- 3 National Restaurant Association (2008). 2007/2008 Restaurant Industry Operations Report, as cited in National Restaurant Association, 2008 Restaurant Industry Forecast.
- 4 PG&E Food Service Technology Center.
- 5 California Public Utilities Commission (CPUC) (2008). Energy Efficiency Groupware Application, 4th Quarter 2007 E3 Calculators. Available at: <http://eega2006.cpuc.ca.gov>
- 6 Personal communication, Energy Trust of Oregon, July 9, 2008.
- 7 Personal communication, Wisconsin's Focus on Energy, July 16, 2008.
- 8 U.S. Department of Agriculture Economic Research Service. Briefing Room: Food Marketing System in the United States. Available at: www.ers.usda.gov/Briefing/FoodMarketingSystem/foodservice.htm
- 9 PA Consulting Group (2008). Pacific Gas & Electric: Process Evaluation and Strategic Assessment of the Food Service Technology Center. Available at: www.calmac.org/publications/PGE_FSTC_Eval_Report_-_Final_Feb_14_2008.pdf
- 10 PA Consulting Group (2008). Pacific Gas & Electric: Process Evaluation and Strategic Assessment of the Food Service Technology Center. Available at: www.calmac.org/publications/PGE_FSTC_Eval_Report_-_Final_Feb_14_2008.pdf
- 11 Pacific Gas and Electric Company. E-mail communication and data sharing, January 2009.
- 12 Southern Minnesota Municipal Power Agency. E-mail communication and data sharing, April 2009.
- 13 Energy Trust of Oregon. E-mail communication and data sharing, April 2009.

ENERGY STAR[®], a program sponsored by the U.S. EPA and DOE, helps us all save money and protect our environment through energy-efficient products and practices. Learn more. Visit www.energystar.gov.

