



ENERGY STAR® for Commercial Dishwashers
Stakeholder Meeting

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Meeting Agenda



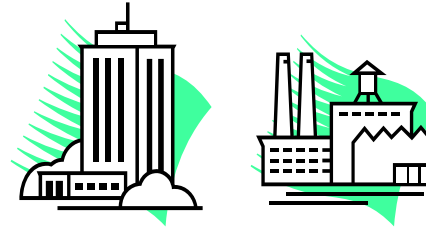
- ENERGY STAR 101
- Overview of CEE Commercial Kitchen Initiative
- Walk Through of Draft Specification for Commercial Dishwashers
- Next Steps

Focus on Product Labeling



Residential

- Labeled Products
 - 40+ products/1400 manufacturers
 - 10 to 60% more efficient
- Labeled New Homes
 - 30% more efficient
- Home Improvement Services
 - Beyond Products
 - Ducts/home sealing
 - Whole home retrofits



Commercial/Industrial

- Corporate energy management
 - Benchmarking, goals, upgrades
 - Whole building labeling for excellence
- Labeled products
 - For plug loads, not system components
- Small Business initiative

ENERGY STAR Product Labeling



Objectives:

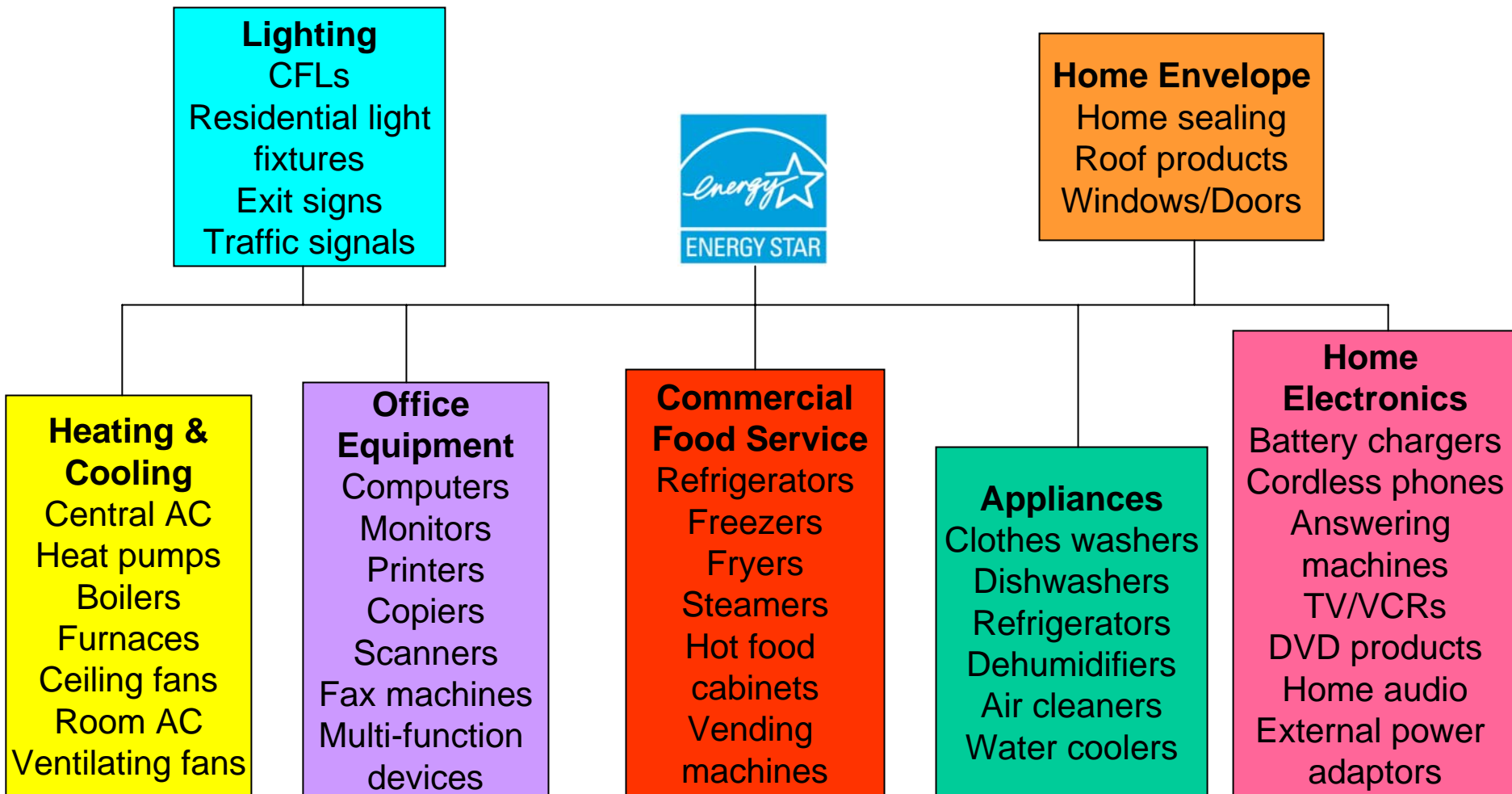
1. To reduce greenhouse gas emissions, caused by the inefficient use of energy
2. To reduce water use so as to conserve water supplies, reduce the need for new costly water and wastewater treatment plants, and save energy used to pump and treat water and wastewater.
3. To make it easy for businesses and consumers to identify and purchase products with enhanced energy and water efficiency that offer savings on utility bills while maintaining performance, features, and comfort



What is ENERGY STAR?

1. Distinguishes what is efficient/better for the environment with no sacrifice in features or performance
2. Voluntary program
3. Products that earn the ENERGY STAR meet strict energy performance criteria set by the US EPA or DOE

40+ Product Categories Are Covered by ENERGY STAR in the US



ENERGY STAR Partners in the US



- ENERGY STAR works with many stakeholders in reducing greenhouse gas emissions including
 - Manufacturers, retailers, and state and utility partners
- More than 1,500 manufacturers labeling more than 35,000 product models
- Over 800 retailers (with more than 21,000 storefronts)
- More than 450 utilities and other energy efficiency program sponsors promoting ENERGY STAR

Activities to Support Partners and Qualifying Products



- **Publicity and consumer education**
 - Public Service Announcements in print, TV, and radio
 - Annual National Promotions for Lighting, Cooling Equipment, Home Electronics, and Home Appliances
 - Website - www.energystar.gov
 - Consumer brochures
- **Marketing tools**
- **Recognition with annual awards**
- **Purchasing tools including sample procurement language**

Choose A **Victory** For The Planet

ENERGY STAR[®] has, naming **Victory** the first foodservice equipment maker ever to be selected as a **Manufacturing Partner of the Year**.



Why did the Environmental Protection Agency and Department of Energy recognize Victory with this ENERGY STAR award?

- Victory Refrigeration is the clear leader in the Foodservice Industry with more ENERGY STAR qualified models – more than 500 – than any other competitor. Since the EPA created a category for commercial refrigerators and freezers Victory has dominated the listings by offering a broad range of energy efficient products designed to meet the rigorous demands of the market.
- Because Victory has become an industry leader in educating channel partners and end-users about the multiple benefits provided by ENERGY STAR qualified foodservice equipment.
- Because Victory's V2E pledge ensures that all of the company's equipment will be among if not the most efficient models in their categories, generating hundreds of dollars in annual energy savings for operators compared to competing refrigerators and freezers.
- Because Victory recognizes that helping operators cut energy consumption is not only good for their bottom lines, it is also good for the future of our shared environment.

Victory Builds Refrigeration Equipment
With End-Users' **Best Interests In Mind**

To learn more about Victory Refrigeration
please call 856.428.4200 or visit www.victory-refrig.com.



PART OF **AGA** FOODSERVICE GROUP



Victory Refrigeration 2005 ENERGY STAR Partner of the Year

First Commercial Foodservice Equipment Partner to win

Ad from FER May 2006

ENERGY STAR Success



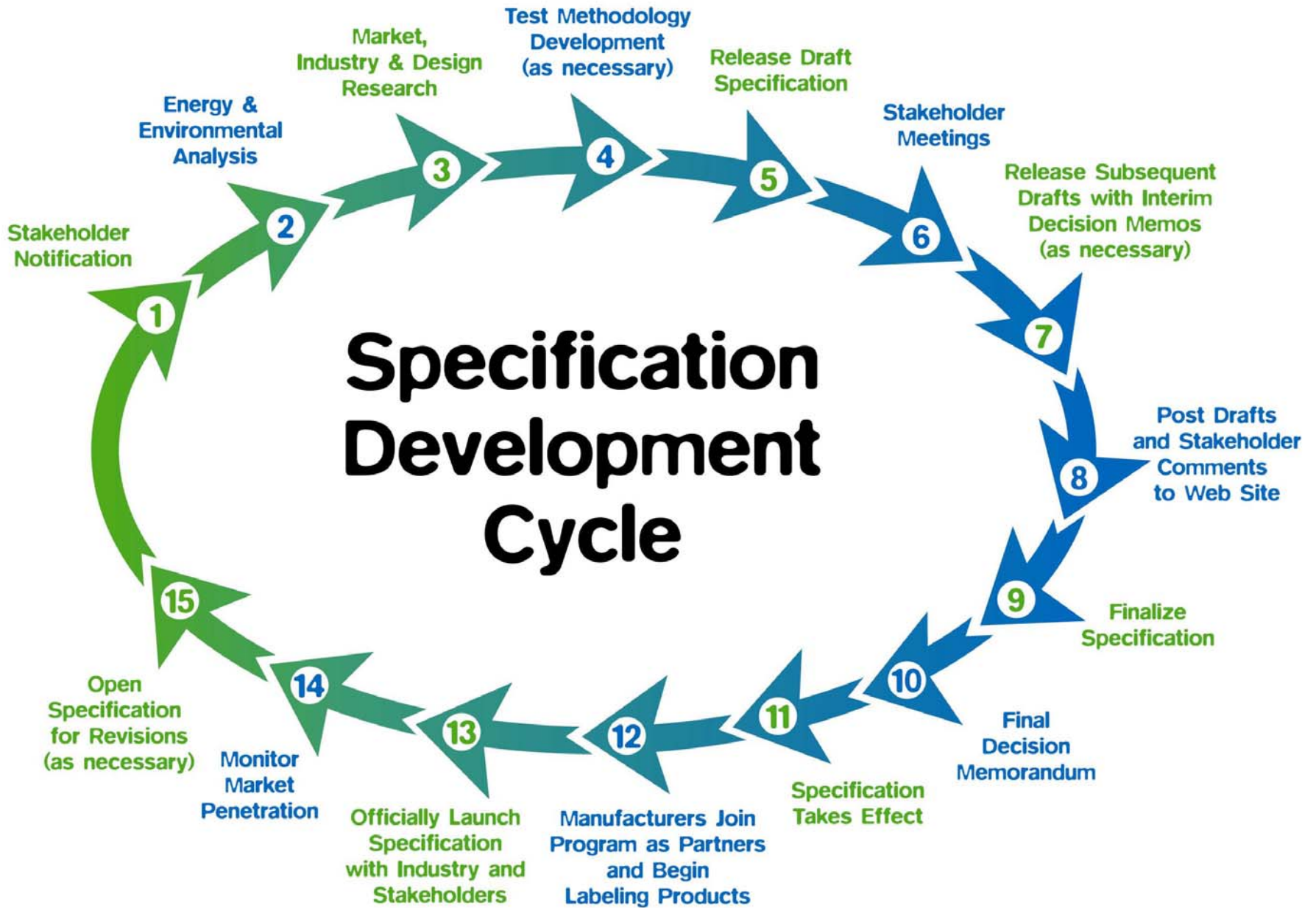
- More than 60% of Americans nationwide recognize the label
- In 2005 alone, Americans
 - saved \$12 billion dollars
 - prevented 35 million metric tons of greenhouse gas emissions
 - equivalent to 23 million cars by choosing ENERGY STAR
 - purchased about 175 million ENERGY STAR qualified products

Developing an Effective Specification



- 1 Energy and environmental analysis
- 2 Market research and design analysis
- 3 Specification development (with significant stakeholder involvement)

Specification Development Cycle

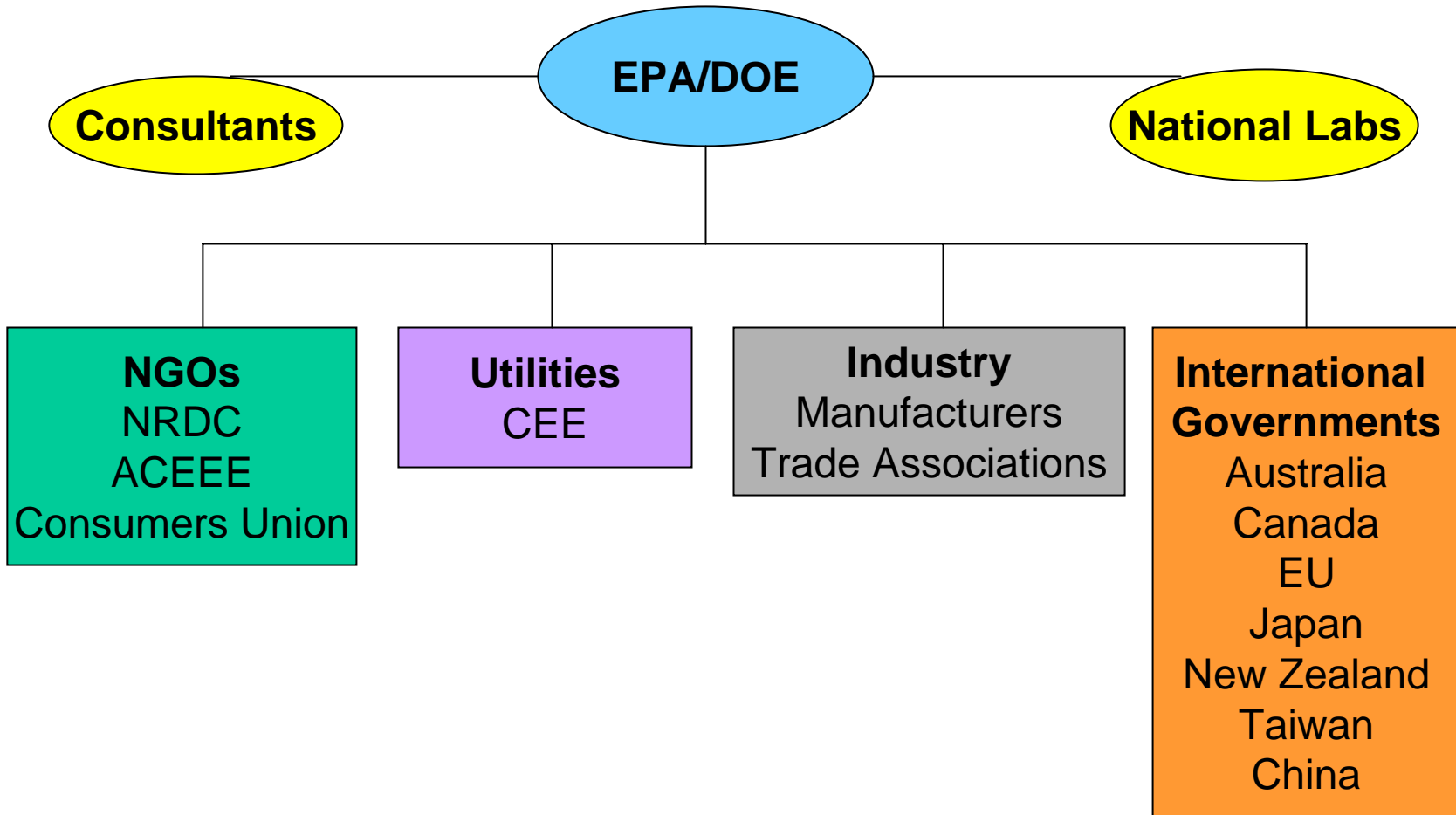


Important Process Elements



- Consistency
- Transparency
- Inclusiveness
- Responsiveness
- Clarity

ENERGY STAR Stakeholders



Guiding Principles for Specification Development



- Cost-effective efficiency
- Performance maintained or enhanced
- Significant energy savings potential
- Efficiency is achievable with non-proprietary technology
- Product differentiation and testing are feasible
- Labeling can be effective in the market

ENERGY STAR Partnership Agreement



- 3 Sections
 - Commitment Form
 - Partner Commitments
 - Eligibility Criteria
- Commitment Form: only has to be signed once and allows partner to expand product areas at any time
- Partner Commitments: similar language across ALL products
- Eligibility Criteria: Product specifications, testing guidelines, and effective dates

Partner Commitments



Three Standard Commitments:

- Annual submission of product information
- Clear display of the ENERGY STAR on products, on product packaging, in product literature, and on company Web site
- Annual submission of ENERGY STAR unit shipment data

**Essential to continued growth and
success of ENERGY STAR!**

Annual Submission of Product Information



Goal: to ensure qualified product information provided on the Web site is current

- Qualifying products do not need to be retested if the specification has not changed
- Submit list of products that continue to qualify
- Report products that have been discontinued year round

Product Labeling



Goals:

- To ensure that participating manufacturers get recognition for their efforts
- To increase awareness of ENERGY STAR among consumers
- To make it easy for specifiers, purchasers, distributors, and/or others to identify energy-efficient models
- To maintain the integrity of the ENERGY STAR brand by ensuring that the symbol is visible in the marketplace

Annual Shipment Data



Goal: to determine market penetration of ENERGY STAR; determine program success and if changes are needed

- EPA will work with partners to determine data collection format
- Data can be masked and/or aggregated
- Data may be provided by a third party or trade association on behalf of its members

Interest in Commercial Dishwashers



- A number of manufacturers and end users have shown interest in ENERGY STAR
- Non-proprietary, high efficiency technologies are currently available due to increasing demand for improved performance from end users
- Industry accepted test method currently available
- Expand the suite of commercial food service equipment to support EPA's ENERGY STAR promotion of Efficient Commercial Kitchens
- EPA interest in energy and water efficiency – agency wide

Commercial Kitchen Energy Use



- May 17, 2006 New York Times article on commercial kitchen energy use and need for increased efficiency

Shaping Restaurants to Be Models of Efficiency

By LAURA NOVAK

SAN RAMON, Calif. **H**ERE'S food for thought: if restaurants were automobiles, they would be Hummers. That's because the restaurant business wastes more energy than any other industry in America. Experts say that 80 percent of the \$10 billion annual energy bill for commercial food service is squandered by the use of inefficient equipment.

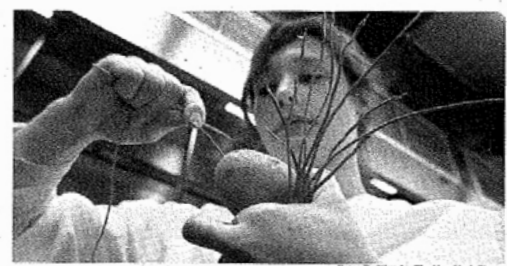
But one organization here, the Food Service Technology Center, has been trying to turn gas-guzzling eateries into energy-efficient hybrids.

For 20 years, the center has been "road-testing" restaurant equipment, as Don Fisher, the center's project manager, calls it. The center applies the equivalent of a mile-per-gallon rating to the appliances that cook and refrigerate food and clean the hardware used to prepare it. Mr. Fisher says the energy waste in restaurants is "the same thing as if people go out and buy all the materials to make 10 hamburgers or sandwiches and then just throw eight of them away."

According to the National Restaurant Association, a trade group in Washington, there are 925,000 restaurants and food service outlets in the United States, with sales expected to reach \$11 billion in 2006. About 50 percent of restaurant operators have bought energy-saving equipment in the last two years, the association reports. But for the Food Service Technology Center, it has been a long, slow climb uphill to make the industry aware of its wastefulness.

"For years nobody cared about what we did," Mr. Fisher said. "We were out there doing something pie in the sky, California stuff. But now there are very few manufacturers who don't know who we are."

On any given day at the center, located 35 miles east of San Francisco, researchers can be found cooking common foods using equipment sent by manufacturers or restaurant owners. For example, one technician inserted temperature sensors called thermocouples into about a dozen raw potatoes before placing them in



HOT POTATO Lia Wilson, using food to test an oven's energy use.

an oven. The thermocouples were connected to a computer calculating how much heat was needed to cook each potato. Another researcher measured the moisture and fat content of cheese sprinkled on several pizzas before baking. These equations are later factored into final cooking temperatures that will be compared with measurements of energy used. (The food is donated to a local food bank.)

"Our goal was to develop a robust procedure that would measure energy consumption and efficiency and at the same time document how many pounds of hamburger the appliance can cook and how uniformly," Mr. Fisher said. "Then the restaurant operator's goal is to reduce operating costs so they don't have to charge so much for a hamburger."

The center was created in 1986 by Pacific Gas and Electric Company, the utility, to help food service customers understand the energy costs of their equipment. The company hired Mr. Fisher and his partner, Judy Nickel, both of whom had experience in food service, to develop standard test methods. (Years later, Mr. Fisher and Ms. Nickel formed their own company, Fisher-Nickel Inc., which runs the center under contract with Pacific Gas and Electric.)

The first appliances they tested were deep-fat fryers, quickly followed by commercial griddles. It took five years to get the two test

methods approved by ASTM International, an organization that develops technical standards for products, services and systems in 138 fields. With this stamp of approval, the Food Service Technology Center carved its niche as the only research lab for testing electric and gas-fired restaurant equipment.

The center's research is highly regarded by many companies, which want independent information, not a manufacturer's marketing claims, before investing in equipment.

"The restaurant industry is in a growth pattern all the time," said Rick McCaffrey, vice president of architecture and design for Brinker International, a chain of restaurants like Chili's that had \$3.9 billion in revenue in 2005. "We do one thing and it can impact a huge volume," he said.

He recalled, for example, that when the center was testing low-flow spray nozzles for rinsing dishes, Mr. Fisher showed him a more expensive yet more efficient model than the ones used in Brinker restaurants. Mr. McCaffrey bought the energy-saving model. "It takes about half the amount of water that our old nozzles did," he said. "The payback for us was about a week, and the impact to the communities our restaurants are in was great."

Companies pay nothing for the testing, Mr. Fisher said. The center's \$1.5 million budget is provided by Pacific Gas and Electric, and test results are available to anyone.

Some customers, which include companies like McDonald's, Marriott, Darden Restaurants and Safeway, turn to the center routinely for testing. Over time, the center has developed 35 procedures for measuring energy consumption and efficiency in 50 categories of restaurant equipment. Mr. Fisher estimates that in 20 years the center has tested 500 pieces of equipment.

The industry's efforts to save energy are becoming more universal. "This is not a fad," said Charlie Souhrada, director of member services for the North American Association of Food Equipment Manufacturers, a trade group in Chicago. "This is definitely where the future lies from the food service operators to the food service suppliers' perspectives."

The National Restaurant Association says 7 out of 10 restaurants are small businesses with fewer than 20 employees. Experts say these smaller owner-operated places are usually too cash poor to invest in energy-efficient technology.

"This is a large and dynamic market and one in which the pressure of staying in business is greater than any energy or water bill," said Ted Jones, senior program manager at the Consortium for Energy Efficiency, a nonprofit organization in Boston. "It's easier to pay a monthly utility bill and say, 'yes, it goes up, but there is nothing I can do about that.' A significant market barrier is for us to say that 'yes, you can do something about it by the types of equipment you purchase.'"

Three hundred customers a year visit the Food Service Technology Center for testing or to request site surveys and design reviews. Of the 2,500 customers who attended seminars at the center last year, Mr. Fisher says only 20 percent were small businesses because many owners cannot take time away from their restaurants. So, the center makes its extensive research available on its Web site, fishnick.com.

"We've been able to see the impact we've had on the industry," he said. "We've seen people change their pattern. The positive effect of energy efficiency on greenhouse gases is huge."



Energy Savings Potential (2010)

- ENERGY STAR qualified commercial dishwashers* save on average: 79 MBtu/yr and \$613/yr
- Annual savings due to ENERGY STAR
 - 1.7 Trillion Btu in 2010
 - 438M gallons of water (2010)
 - Number of Cars off the road: 18,535 (2010)
- Assumptions
 - Equipment Lifetime: 20 years
 - 39,000 units shipped, 475,000 units in stock (2006)
 - 13% initial market penetration of ENERGY STAR (2007)
 - Energy Consumption: conventional (225 Mbtu/yr) vs. ENERGY STAR (146 Mbtu/yr)
 - Gas price: \$9.31/Mbtu and Water price: \$0.004/gallon

* Average of high and low temp machines: under counter, door type, and conveyor

Cost Effectiveness

Under Counter	Simple Payback (yr)
Low	0.7
High	1.2
Door Type and Conveyor	
Low	1.7
High	3.2

*Incremental Cost: Under Counter, \$500-\$800; Door/Conveyor, \$1200-2200

*Assumes lifetime of 20 years for commercial dishwasher.

*Assumes 10% discount rate.

EPA's Commercial Kitchen Efforts



- Partnering with CEE and utilities to increase marketing penetration of qualified commercial food service products
 - Many utilities are offering incentives and programs for qualified CFS
- Developing new tools to assist in the sales of qualified equipment
 - New ENERGY STAR rebate locator at:
http://www.energystar.gov/index.cfm?fuseaction=CFSrebate.CFSrebate_locator
 - Templates for Quick Service Restaurants and Full-Service Restaurants, with more to follow
- Looking for opportunities within the replacement and retrofit markets to learn more about the markets and how products are sold
- Bundling ENERGY STAR qualified equipment into a Commercial Kitchen Initiative with best practices to sell into these markets