

**POWER
TO
SAVE
for SMALL
BUSINESS**

**AN ENERGY
CONSERVATION
GUIDE**



Hawaiian Electric Company

www.heco.com



Welcome. Given today's highly competitive market, finding ways to save money on energy costs makes sense for any business. These efforts can provide significant savings that go directly to your bottom line. Conserving energy also demonstrates a commitment to doing your part to help preserve our environment, and sends a positive message to your employees and customers.

This kit offers ideas to launch and manage an energy conservation program in your workplace. Energy and cost-saving tips will inform and inspire employees to contribute to the effort. Get started by taking the energy use survey on the next page to identify areas where your company can save.

Please call us if you have any questions or would like more copies of this kit. Find additional energy-saving tips at heco.com. Thank you for your commitment to conserving energy!

Education and Consumer Affairs
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ENERGY CONSERVATION SURVEY FOR SMALL BUSINESSES



Take a look at general energy use in your business. Check all practices that apply, giving one point for each checked box. Add up the points to see how you scored.

COOLING

- Are ceiling fans used to promote cooling and air circulation?
- Is the air conditioner turned off when your business is closed?
- Is the thermostat or room air conditioner set to 75 degrees or warmer?
- Are the office doors and windows kept closed to prevent the cool air from leaking out?
- Are the windows tinted or shaded by awnings to prevent the sun's heat from entering?
- Do planted shrubs or trees provide shade to the facility?

LIGHTING

- Are motion sensors installed in areas where occupancy is intermittent, such as bathrooms, conference rooms, and storage rooms?
- Are unused ballasts disconnected?
- Are fixtures equipped with energy-efficient lights such as ENERGY STAR® qualified CFLs, LEDs, and T8 or T5 fluorescent lamps?

ELECTRONICS

- If available, is the standby mode activated on office equipment, such as copy machines and computers?
- Are ENERGY STAR qualified equipment considered for new purchases?

EMPLOYEE AWARENESS

- Are appliances and electronic equipment turned off when not in use?
- Are non-essential appliances and equipment unplugged or their power strips switched off when not in use?
- Do employees turn off lights in unoccupied spaces or when not in use?
- Are computers and monitors turned off or set to go into sleep mode when not in use?

Add up your total score for this section: TOTAL POINTS

11 – 15

FANTASTIC job! You are making great efforts to save energy throughout your business. Keep up the good work! Read on to find even more ways that you can save.

6 – 10

Good effort. You are on your way to being a super energy saver! Review the sections where you received the fewest points. There are more ways to save; read on to learn more.

5 and
BELOW

Let's work on energy use. This quiz is already one step in the right direction. Review the sections where your business received the fewest points. The helpful tips in the back pocket of this kit will give you and your employees the tools to conserve energy. Read on!

ENERGY CONSERVATION SURVEY FOR COMMERCIAL KITCHENS



If you operate a commercial kitchen or restaurant, continue with the following questions.

APPLIANCES

- Are cooking appliances shut down between shifts?
- Is there a shutdown schedule to ensure that equipment is turned off after hours?
- Is the preheating minimized to no more than 20 minutes when possible?
- Are maintenance services scheduled regularly?
- Do repairs and leaks get addressed right away?

WATER HEATING

- Is the water temperature monitored and kept around 140 degrees?
- Are faucets equipped with low-flow spray valves or aerators?

REFRIGERATION

- Are old and broken gaskets repaired?
- Is the refrigerant refilled regularly?
- Are condenser and evaporator coils cleaned regularly?
- Is there ample air circulation around the outside of the refrigerator?

EMPLOYEE AWARENESS

- Do employees run the dishwasher on full loads as much as possible?
- Are ovens maximized and used fully loaded when possible?
- Are lids used on pots to hold in heat and reduce the cooking time?
- Are lids kept closed on food wells and prep tables?

Add up your total score for this section: **TOTAL POINTS**

11 – 15

FANTASTIC job! You are making great efforts to save energy throughout your restaurant. Keep up the good work! Read on to find even more ways that you can save.

6 – 10

Good effort. You are on your way to being a super energy saver! Review the sections where you received the fewest points. There are more ways to save; read on to learn more.

5 and
BELOW

Let's work on energy use. This quiz is already one step in the right direction. Review the sections where your business received the fewest points. The helpful tips in the back pocket of this kit will give you and your employees the tools to conserve energy. Read on!

Now that you have evaluated your business' energy use, engage employees to develop an energy conservation campaign by following these simple steps:



1: GET EMPLOYEES ON BOARD

Enthusiasm and commitment from everyone in the company creates momentum for success.

Establish measurable goals

Be specific about what you want to achieve. Clear and realistic goals make it easier to measure your progress. Suggest reducing the average energy consumption by X% during a specified period. A 5% reduction might be a reasonable target to start with.

Build the team

Select someone who is motivated to lead the effort and empowered to make decisions. If there are several departments, consider recruiting a balanced team of representatives from across the organization to help. Find representatives from management, operations and maintenance, finance and accounting, communications, and human resources. Look for individuals who believe in the effort and demonstrate functional, technical, problem solving and communication skills.

2: DEVELOP AN ENERGY AWARENESS CAMPAIGN

Team members can take the following steps to create a roadmap that will help them inform and motivate employees to conserve energy.

Tailor your messages

Identify information that is relevant to your employees and tailor how it will be communicated. Educate your employees on the importance and benefits of saving energy. Give them specific yet simple directions on how they can help. Emphasize teamwork—everyone doing one small part to reach a common goal. Avoid sounding negative or assigning blame for inefficient use of energy.

Here are some suggestions on how to address common questions:



Keep employees informed

Everyone gathers information differently, and there are many ways to communicate.

Some ways to share information include:

- Letters/memos/emails
- Company newsletter
- Press releases
- Brochures
- Posters in common areas (visit heco.com to download)
- Magnets or stickers
- Displays
- Messages on employee pay notices or inserts with paper paychecks
- Meetings
- In-person sessions
Organize an energy awareness day or week. Host energy conservation presentations and invite guest speakers from the community.
- Contests
Hold company-wide energy quizzes on energy conservation. Have employees identify equipment that consume large amounts of energy and suggest ways to reduce their use. Offer incentives such as a department party, personal recognition, or prizes.
- New employee information kits



Create a budget

Your campaign can be scaled up or down depending on your resources. Consider the following expenses:

- Program management and staff labor
- Printing costs
- Rewards or recognition expenses
- New equipment including power strips or energy-efficient light bulbs

Outline a Schedule

Establish a realistic timeline for your program. Don't try to do everything at once. Make time to focus on doing a few things well. The schedule can always be adjusted as the program progresses.

Assemble Tools

Hawaiian Electric offers a number of tools on heco.com, including free downloadable energy conservation posters to get started. Make the connection between energy conservation in the workplace and the home. Employees will see the added benefit of personal savings by sharing similar practices with their families. They can visit heco.com to complete a home energy survey and read other tips on how to reduce electricity use at home.



3: IMPLEMENT THE PLAN

Kick off with a bang

Announce the official start of the program. Summarize the goals, educate employees about energy use in the company, provide conservation tips, and offer ways that employees can participate.

Encourage participation at all levels of the organization

Invite employees to submit energy-saving ideas. Organize a competition to see which department can identify the greatest number of energy conservation practices to implement.

Monitor the program

Follow the schedule and track energy consumption using the average kilowatt-hour use per day noted in your bill. Compare energy use with the same month last year. Be aware of seasonal variations in energy use (for example, increased air conditioning use during the hotter months of the year). Ask employees to submit program suggestions and adjust the plan as needed.

Communicate regularly

Share the company's progress with employees. Express the results in concrete terms, for example: We've reduced our energy use by X kilowatt-hours and saved \$Y. Acknowledge employee ideas and efforts—big or small—they all add up.

Repeat the messages

When asking people to change their habits, reminders are helpful. Try to vary the presentation so they don't get bored and tune out. Post reminders, incorporate a checklist into operational and maintenance procedures, and educate staff through department meetings.

Lead by example

Inform employees about any investments or changes the company makes to support energy conservation.

4: CELEBRATE SUCCESSES

Announce the results to employees, and consider sharing achievements with customers and the community.



Recognize participants

Acknowledge or reward accomplishments to encourage employees to keep up their energy-saving habits. Provide certificates and consider including participation in performance evaluations.

Sustain success

Reinforce good habits by continuing to vary your messages, present new challenges, or add new members with fresh ideas to the team. Consider surveying employees to solicit new ideas, and find out which activities they found most useful and engaging.

Acknowledgement: Many of the steps in this guide were originally developed by BC Hydro for its Employee Energy Awareness Handbook on bhydro.com.

HOW MUCH DOES THAT EQUIPMENT REALLY COST YOU?

Learning how much it costs to operate your equipment and appliances will help you to make wise decisions on how you use them. It also can help you to decide if it's time to replace an old appliance with a new energy-efficient model.

ENERGY USE GUIDE FOR COMMONLY USED OFFICE EQUIPMENT

Here is a sample listing of office equipment and estimates of how much it costs to operate them.

	Use (Time)	kWh/Year	Annual Cost*
COMPUTERS			
Desktop Computer and Monitor (on)	8 hours/day	216	\$65
Desktop Computer and Monitor (sleep mode)	16 hours/day	23	\$7
Laptop Computer (on)	8 hours/day	72	\$22
Laptop Computer (sleep mode)	16 hours/day	12	\$3

PRINTERS/COPY MACHINES			
Black and White Laser Printer (printing)	2 hours/day	180	\$54
Black and White Laser Printer (standby)	22 hours/day	16	\$5
Color Ink Jet Printer (printing)	2 hours/day	18	\$5
Color Ink Jet Printer (standby)	22 hours/day	42	\$12
Copy Machine, conventional monochrome or color, ≤50 ipm		697	\$209
Copy Machine, monochrome, ENERGY STAR, ≤50 ipm		343	\$103
Copy Machine, color, ENERGY STAR, ≤50 ipm		499	\$150
Multifunction Phone, Fax, and Copy Machine (on)	2 hours/day	16	\$5
Multifunction Phone, Fax, and Copy Machine (standby)	22 hours/day	37	\$11

PROJECTOR			
Video Multimedia Projector	3 hours/day	211-302	\$63-\$91

*Calculations are based on an electricity rate of \$0.30 per kWh (2008 Schedule G average).

	Use (Time)	kWh/Year	Annual Cost*
LARGE APPLIANCES			
Air Conditioner, Room and Small Split-System			
8,000 Btu/H, EER 10.8	8 hours/day	2133	\$640
10,000 Btu/H, EER 10.8	8 hours/day	2667	\$800
12,000 Btu/H (1 TON), EER 10.8	8 hours/day	3200	\$960
18,000 Btu/H (1.5 TON), EER 10.7	8 hours/day	4845	\$1,453
24,000 Btu/H (2 TON), EER 9.4	8 hours/day	7353	\$2,206
Air Conditioner, Central and Large Split-System			
24,000 Btu/H (2 TON), SEER 13	8 hours/day	5317	\$1,595
36,000 Btu/H (3 TON), SEER 13	8 hours/day	7975	\$2,393
48,000 Btu (4 TON), SEER 13	8 hours/day	10634	\$3,190
Freezer (chest)			
Manufactured before 1980, 17-22 cu. ft.		1200-1560	\$360-\$468
Manufactured after 1980, 17-22 cu. ft.		480-1200	\$144-\$360
Manufactured after 2001, 17-22 cu. ft.		480-516	\$144-\$155
ENERGY STAR after 2001, 17-22 cu. ft.		420-456	\$126-\$137
Refrigerator/Freezer (top freezer)			
Manufactured before 1980, 19-21 cu. ft.		1620-2400	\$486-\$720
Manufactured after 1980, 19-21 cu. ft.		900-1920	\$270-\$576
Manufactured after 2001, 19-21 cu. ft.		492-600	\$148-\$180
ENERGY STAR after 2001, 19-21 cu. ft.		384-444	\$115-\$133
Vending Machine			
Conventional, 500 cans		3912	\$1,175
ENERGY STAR, 500 cans		1680	\$504

*Calculations are based on an electricity rate of \$0.30 per kWh (2008 Schedule G average).

	Use (Time)	kWh/Month	Annual Cost*
SMALL APPLIANCES			
Coffeemaker (Brew Cycle)	8 min/day	60	\$18
Coffeemaker (Warm Cycle)	2 hours/day	50	\$15
DVD Player (on)	2 hours/day	9	\$3
DVD Player (standby)	22 hours/day	18	\$5
Fan, Ceiling or Oscillating	8 hours/day	288	\$86
Microwave Oven	20 min/day	180	\$54
Radio	8 hours/day	14-202	\$4-\$60
Television, 32-inch LCD	8 hours/day	412	\$124
Television, 42-inch plasma	8 hours/day	783	\$235
Toaster Oven/Broiler (oven function)	20 min/day	45	\$14
Water Cooler			
Cold, Conventional		104	\$31
Cold, ENERGY STAR		58	\$17
Hot and Cold, Conventional		788	\$237
Hot and Cold, ENERGY STAR		432	\$130

LIGHTS			
Compact Fluorescent Lamp, 26-watt	9 hours/day	84	\$25
Fluorescent T12 (4-foot tube)	9 hours/day	143	\$43
Incandescent, 100-watt	9 hours/day	324	\$97

*Calculations are based on an electricity rate of \$0.30 per kWh (2008 Schedule G average).



Hawaii Energy

New equipment purchases may be eligible for a rebate. As the Public Benefits Fee Administrator, Hawaii Energy offers businesses standard and custom rebates for qualified energy-efficient technologies. Call 808-537-5577 or visit hawaiienergy.com for more information.

ENERGY COST COMPARISON OF COMMERCIAL KITCHEN APPLIANCES

The savings from energy-efficient appliances in commercial kitchens show how making wise appliance choices can pay off.

	STANDARD COMMERCIAL KITCHEN		ENERGY-EFFICIENT COMMERCIAL KITCHEN		ENERGY-EFFICIENT KITCHEN'S ANNUAL SAVINGS*
	STANDARD APPLIANCE	ANNUAL ELECTRIC COST*	ENERGY-EFFICIENT APPLIANCE	ANNUAL ELECTRIC COST*	
Dishwasher (under counter, high temperature, 75 racks washed per day)	Conventional dishwasher	\$5,164	ENERGY STAR dishwasher	\$2,953	\$2,211
Steamer, 3-pan**	Electric boiler-based	\$2,592	ENERGY STAR electric connectionless	\$1,266	\$1,326
Holding Cabinet, 12 cu. ft.	Conventional cabinet	\$1,577	ENERGY STAR cabinet	\$631	\$946
Lighting	Eight 100-W incandescent lamps	\$1,051	Eight 25-W CFLs	\$263	\$788
Griddle, 3 ft. (producing 100 lb./day)	Conventional electric griddle	\$5,117	ENERGY STAR electric griddle	\$4,551	\$566
Oven	Conventional electric combination oven	\$3,658	ENERGY STAR electric convection oven	\$3,094	\$564
Refrigerator, 44 cu. ft.	Conventional refrigerator	\$1,064	ENERGY STAR refrigerator	\$705	\$359
Exit signs	Two incandescent-based signs	\$210	Two LED-based signs	\$15	\$195
Ice machine** (self contained, 137 lb./day harvest rate)	Conventional ice machine	\$1,777	ENERGY STAR ice machine	\$1,609	\$168
Freezer, 24 cu. ft.	Conventional freezer	\$1,356	ENERGY STAR freezer	\$1,202	\$154
TOTAL SAVINGS					\$7,277

* Calculations are based on ENERGY STAR Cost Calculators assuming an electricity rate of \$0.30 per kWh (2008 Schedule G average) and 12 hours of use per day.

** Reduced water use in more efficient appliances will yield additional savings.

DIDN'T SEE YOUR APPLIANCE LISTED?

To estimate how much it costs to operate a particular appliance simply follow the chart below in four simple steps.

STEP 1 Determine the appliance's wattage and convert it to kilowatts.
 $\text{_____watts} / 1000 = \text{_____kilowatts}$

STEP 2 Determine the number hours you use the appliance in a month
 _____hours

STEP 3 Determine the appropriate cost per kilowatt-hour based on your business' electric rate.

- For those on Schedule G the average cost per kilowatt-hour in 2008 was \$0.30
- For those on Schedule J the average cost per kilowatt-hour in 2008 was \$0.25

STEP 4 Calculate the operating cost by multiplying the numbers in steps 1, 2, and 3.
 $\text{_____ kilowatts} \times \text{_____ hours} \times \$\text{_____ per kilowatt-hour} = \text{monthly cost to operate the appliance}$

Cost to Operate Your Appliances

APPLIANCE	KILOWATTS	HOURS USED PER DAY	COST PER KILOWATT	COST OF OPERATING APPLIANCE
	STEP 1	STEP 2	STEP 3	STEP 4
TV (42 INCH PLASMA)	272 (watts) /1,000 = 0.272 kW	7 hours	\$0.30 per kilowatt-hour	0.272 kW x 7 hrs x \$0.30 = \$0.57 to operate this TV for seven hours
1.			\$0.30 per kilowatt-hour	
2.			\$0.30 per kilowatt-hour	
3.			\$0.30 per kilowatt-hour	
4.			\$0.30 per kilowatt-hour	
5.			\$0.30 per kilowatt-hour	

HINTS:

- If the wattage is not listed on the appliance, but the amps and volts are, calculate the wattage as follows: Amps x Volts = Watts
- Motors are often rated on horsepower. One horsepower is roughly equal to one kilowatt.

WHAT TO LOOK FOR WHEN CONSIDERING A NEW APPLIANCE

If you are purchasing a new appliance, it is important to compare available energy-efficient models with the ENERGY STAR® and ENERGYGUIDE® labels. Both labels will help you choose appliances that can save you money in the long run. Your appliance purchases today will affect your electrical bill for months and years to come.



ENERGY STAR QUALIFIED APPLIANCES

When purchasing a new appliance be sure to look for those with the ENERGY STAR label. ENERGY STAR qualified appliances have met strict energy efficiency guidelines set by the U.S. Environmental Protection Agency (EPA), U.S. Department of Energy (DOE), and typically use 10% to 50% less energy than standard models.

Visit energystar.gov for more information and a listing of ENERGY STAR qualified products.

HOW TO READ AN ENERGYGUIDE LABEL

Choosing appliances in today's market can be a difficult task. Although there are many decisions to consider when buying a new appliance, many of us overlook the most important aspect of the purchase, how much electricity the appliance will use over its lifetime. Many models may seem identical in performance, but take a closer look at the yellow ENERGYGUIDE label and

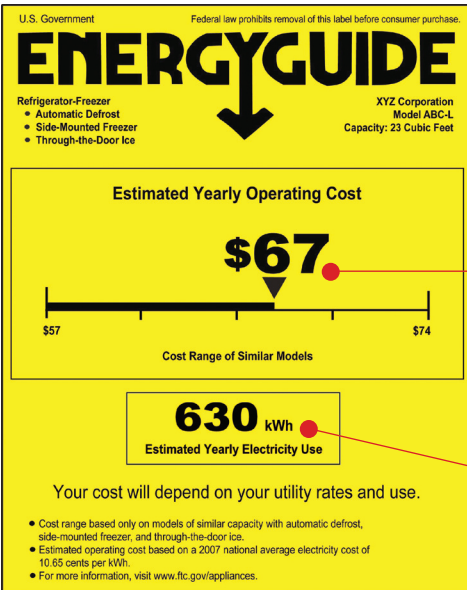
you will see that particular models are more economical to run than others.

READING AN ENERGYGUIDE LABEL

Pay special attention to the following two areas when comparing different appliance brands and models.

This is the estimated yearly operating cost of the appliance on a scale compared to similar models. Estimate is based on the national average cost of electricity, which may be different from the rate you pay. The 2008 average Schedule G rate was \$0.30/kWh.

This is the estimated amount of electricity the appliance uses in a year based on typical use. The lower the kWh amount the better.



Source: U.S. Department of Energy, Energy Efficiency and Renewable Energy

freezers, clothes washers, dishwashers, and room air conditioners.

OTHER SOURCES OF USEFUL INFORMATION

Following is a list of websites that offer useful information on energy efficiency and energy conservation.

- ENERGY STAR is a government-backed program that helps businesses and individuals protect the environment through superior energy efficiency. Find additional tips and tools for your energy conservation efforts online.
www.energystar.gov
- Hawaii Energy Efficiency Program administers rebates and incentives for qualified residential and commercial equipment.
www.hawaiienergy.com
- Hawaii State Department of Business, Economic Development and Tourism (DBEDT) offers information on energy conservation energy tax credits. Its Green Business Program assists and recognizes environmentally responsible businesses.
www.hawaii.gov/dbedt
- Hawaii's Energy Future is an informational website that provides an overview of the diverse energy resources needed to power Hawaii's future and to ensure our energy security. The site also offers energy tips and resources.
www.hawaiisenergyfuture.com
- U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy offers tips on saving energy and money.
www.eere.energy.gov
- National Restaurant Association Conserve initiative explores conservation efforts in restaurants around the nation and offers suggestions and resources.
www.conserve.restaurant.org
- Food Service Technology Center (FSTC) is the industry leader in commercial kitchen energy efficiency and appliance performance testing.
www.fishnick.com

IMPORTANT HECO PHONE NUMBERS

Customer Service for

- Start, change, and termination of service
 - Payment arrangements
 - Billing information
- 548-7311 weekdays
7:30 a.m. to 6:00 p.m.
-

Customer Service for the hearing impaired

548-3596 weekdays
7:30 a.m. to 5:00 p.m.

Trouble Dispatch for

- Outages or power lines down
 - Dimming or bright lights
 - Lights out
- 548-7961 24 hours
-

Consumer Education for

- Energy conservation
 - Residential appliance information
 - School programs
- 543-7511 weekdays
7:30 a.m. to 4:00 p.m.

If you have questions about this kit, or would like additional copies, please call Hawaiian Electric's Education and Consumer Affairs Department at 543-7511 or visit us online at heco.com.



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