

**Grab a clipboard and take this map along on your treasure hunt.** Focus on uncovering opportunities to save. When you find something, make notes about location; tools, materials, or expertise needed; or further research required. Feel free to add to or modify this list to suit your own needs.

Facility Name \_\_\_\_\_ Floor \_\_\_\_\_ Date \_\_\_\_\_ Team \_\_\_\_\_



## Facility Management and Benchmarking

- Managing costs starts with knowing your baseline use, from which to track savings. Start by printing the Data Collection Worksheet for “Restaurant/Bar” found under “Food Sales & Service” on this menu. This Worksheet will list all you need to benchmark your property in the free, online Portfolio Manager® tool for tracking energy, water and recycling/materials management.  
<https://esbuildings.webex.com/mw3300/mywebex/default.do?siteurl=esbuildings>
  - Create your account at <https://portfoliomanager.energystar.gov/pm/signup>
- Learn more at <https://www.energystar.gov/benchmark> and find all Portfolio Manager training and tech support at <https://www.energystar.gov/buildings/training>.
  - Register for ENERGY STAR’s live webinars and find recorded webinars on many sustainability topics.
- Portfolio Manager does not have a module to score restaurants or commercial kitchens on the 1 -100 ENERGY STAR® scale yet. However, national median EUI (Energy Use Intensity is approximately energy use/sq.ft.) for Quick Service Restaurants is 886.4 for Source EUI (kBtu/ft<sup>2</sup>) and 402.7 Site EUI (kBtu/ft<sup>2</sup>). Median EUI is lower for other Restaurants/Cafeterias at 537.7 Source EUI (kBtu/ft<sup>2</sup>) and 325.6 Site EUI (kBtu/ft<sup>2</sup>). You can do much better than the EUI.
- Use “start-up, shut-down” scheduling for house lights, kitchen equipment and heating/air-conditioning.
- Educate and encourage employees to report leaks, turn off lights not in use and to look for savings opportunities.
- Adopt a purchasing/procurement policy that specifies EPA’s ENERGY STAR, WaterSense® and Safer Choice® labeled products when applicable. Customize ENERGY STAR’s template procurement letter for your use.

### NOTES:

### TIP:

- Download the ENERGY STAR Action Workbook for Small Business (with restaurant appendices) for more strategies, action items, and ideas. See the 30-minute ENERGY STAR for Small Business recorded webinar. Start and support a Green Team of members and employees. Find resources to Build Your Own Competition for savings.
- Celebrate your success and recognize contributors. Help your customers and employees achieve savings at home and at guests’ workplaces and Bring Your Green to Work.





## Lighting

- Consider purchasing an inexpensive light meter (under \$30) to assess whether any areas are over-lit, compared to requirements or design levels.
- During daytime and evening hours, identify where lights have been left on in unoccupied spaces (including worship area, offices, restrooms, classrooms, conference rooms, kitchen, family room, hallways, storage, library, etc.)
- During the day, look for “day-burners” – that is, exterior and parking lot lighting that is on and should only be on at night, and which has a failed or dirty light sensor.
- If upgrading your exterior lighting, consider “shielded” fixtures to direct the light where needed and reduce “light pollution.”
- Identify and assess opportunities to use automated lighting controls:
  - Occupancy/motion sensors for low-traffic areas.
  - Timers or daylight sensors to turn off exterior and parking lot lights during the day.
  - Dimming controls in locations where natural lighting (e.g., near windows, skylights, light tubes) can temporarily supplement or replace fixture lighting.
- Confirm that lighting controls are installed to “see” what they must and are operating as intended.
- Assess cleanliness of lamps/fixtures (dust, bugs, any debris) and the need to institute a regular cleaning plan for maximum light output.
- Identify where reflectors can be practically added to amplify existing lighting.
- Consider opportunities for de-lamping, and de-energize and/or remove ballasts that are not in use.
- Evaluate the opportunity to upgrade to more energy-efficient lighting options:
  - Replace T12 fluorescents with T8s or T5s with electronic ballasts (removing obsolete magnetic ballasts) or consider the use of tubular LEDs (TLEDs).
  - Upgrade incandescent and CFL bulbs to LED (especially for task lighting or specialty/decorative applications).
  - Replace incandescent or CFL exit signs with an LED model, or LED retrofit kit.
  - Recycle/dispose of all fluorescent tubes/CFLs and magnetic ballasts properly at your lighting or building supply store.

### NOTES:

#### TIP

- Consider an “all utility audit” that will look for billing errors and proper rate classification for your electricity, natural gas, heating oil, water/sewer, and telecommunications. Such audits are free unless the analysis finds you are due refunds, then the auditing firm is paid a pre-agreed percentage after your refund is complete. If you find no refund, you have confirmed you are not overpaying.



- Review ENERGY STAR lighting and fan product information, use calculators and find local retailers and rebates, plus more lighting facts at [www.energystar.gov/lighting](http://www.energystar.gov/lighting).
- See ENERGY STAR efficient signage opportunities.



## Building Envelope

- Inspect doors and windows to identify gaps or cracks that can be weather-stripped, caulked or filled with foam insulation.
- If new windows must be purchased anyway, consider the incremental costs and savings of high-efficiency windows – which will cost more and save more.
- Generally, keep doors closed to the outside and to any unheated or uncooled areas.
- Consider installation of solar film, awnings, vegetation or insulated curtains for east and west windows to block summer heat gain and allowing solar gain in the winter through south-facing windows. Likewise, depending on your climate, consider blocking heat loss through windows in the winter.
- Consider strategic landscaping to save money on water bills and space cooling in the summer and heating in the winter. See tips and information at <https://www.epa.gov/watersense/outdoors>.
- Inspect attic insulation levels and identify inadequacies to be addressed. If a major remodel opens walls, consider adding insulation.
- Check on the roof: take photographs and notes on any damage, cracked shingles or other surface aging. Note if the roof is still under warranty. In the attic, look for signs of leaks, membrane cracks/holes, or damaged insulation.
  - Depending on “street view” aesthetics and other issues, consider that white, reflective paint can significantly reduce heat gain and even extend the life of some roofing.
- Some restaurants may be able to use much of the information on ENERGY STAR “residential” building products including doors, windows, skylights, roofing; and sealing and insulation resources.

### NOTES:

### TIP:

- For tasks beyond your staff skills and capacity, find professional “green/sustainability” services for the industry.



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## HVAC

- Ensure that HVAC system components are being maintained regularly. If not by qualified staff, then consider an annual maintenance contract to “tune-up” HVAC, both pre-heating and pre-cooling seasons. Qualified staff or a professional should implement the full HVAC maintenance list. However, everyone can help remember to:
  - Replace filters on a regular schedule; monthly during heating/cooling season. Ask your facility staff how often filters are changed.
  - Ensure free airflow to and from supply/return registers (clear furniture, books, papers, or other materials).
  - Ensure that electronics and heat sources are located away from thermostats.
  - Use window shades/curtains to block excess heat and educate staff about when to use them.
  - Identify and prevent any instances of simultaneous heating and cooling. Ensure that individual space heaters are not being used. The use of such personal devices may indicate broader heating issues that should be addressed at the system level.
- Ceiling fans and personal fans can help with energy savings by making rooms feel cooler during summer months. A smart thermostat can be programmed to pre-cool or pre-heat spaces for comfort an hour prior to occupation rather than maintaining the comfort level when not occupied.
  - Depending on outside temperature, programming can be set to turn off the HVAC 15-30 minutes before space use ends for additional savings.
- Programmable thermostats with strategic setpoint times and temperatures can save money and keep you space comfortable.
- Read about “smart thermostats” and implementing a temperature setback policy for heating/cooling when the building is unoccupied (including any special considerations for summer/winter months).
- Have a plan for HVAC failure on the hottest/coldest day of the year. Know the anticipated useful life of your current system, have your contractor “right-size” the new HVAC system to account for your new level of efficiency and reduced demand so you do not pay more for a larger system than you need.
- See ENERGY STAR HVAC products and resources at [https://www.energystar.gov/products/heating\\_cooling](https://www.energystar.gov/products/heating_cooling).

### NOTES:

### TIP:

- Controls are available for virtually all restaurant equipment and functions: scheduling, lighting, plug loads, HVAC, refrigeration, food storage and preparation, etc. If you are not fully automated, get competing bids showing your return-on-investment from 2-3 professionals serving the industry.



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## Office Equipment/Plug Load

- Identify any new office equipment that will be needed soon. Start looking for ENERGY STAR certified equipment options, use the online savings calculators and look for available rebates.
- Identify any equipment left on overnight (including equipment left in sleep/idle or screen saver mode), that should be turned off when not in use.
- Ensure that power management settings are activated on office equipment such as computers, monitors, printers, and copiers.
- Identify where power strips can be used for easy disconnect from power source. Consider the use of advanced power strips.
- Be sure staff know to unplug rechargeable devices once charged.
- Be sure vending machines are turned off or put in sleep mode at the end of the day with a timer. Consider installing motion/occupancy-based vending machine controls.
- Review ENERGY STAR office products and resources and see ENERGY STAR vending machines and water coolers.



## Kitchen/Food Service Equipment

- If the restaurant anticipates purchasing new kitchen equipment, review the ENERGY STAR models, calculate savings and find rebates in advance.
- Some restaurants may have residential type refrigerators, which should be replaced if 9-10 years old. Commercial refrigerators/freezers are much larger are typically silver/stainless steel.
  - Dispose of old refrigerators properly. See the EPA's Responsible Appliance Disposal (RAD) Program at <https://www.epa.gov/rad>.
- If possible, be sure heating equipment is not near cooling equipment, and turn heating equipment off when possible.
- Survey water use to identify major uses; find and fix any leaks—especially hot water leaks.
- Typically, set water temperature to 110 – 120 degrees or per local code to prevent scalds and to save energy and money.
- Check out ENERGY STAR labeled water heaters, including “tankless/on-demand,” solar and other models and find local retailers and rebates.

### NOTES:

### TIP:

- Consider an “all utility audit” that will look for billing errors and proper rate classification for your electricity, natural gas, heating oil, water/sewer, and telecommunications. Such audits are free unless the analysis finds you are due refunds, then the auditing firm is paid a pre-agreed percentage after your refund is complete. If you find no refund, you have confirmed you are not overpaying.

### TIP:

- Feed people, not landfills: visit EPA's Sustainable Management of Food for webinars, tools and tips, including composting and donation. Track materials management and recycling in Portfolio Manager,



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- ENERGY STAR certified commercial coffee brewers offer as much as 35% energy savings and better temperature uniformity compared to conventional models, due efficient electrical systems and well-insulated tanks.
- See EPA's WaterSense® program for water saving labeled products and rebates, for indoor/outdoor water efficiency tips, and best practices at [www.epa.gov/watersense](http://www.epa.gov/watersense).
- When purchasing signage displays, monitors, televisions, water coolers, vending machines and other products look for the ENERGY STAR label at <https://www.energystar.gov/products>.
- Verify oven thermostat accuracy and recalibrate if necessary.
- Establish operating procedures for cooking/baking equipment (for instance, preheating only when necessary, turning down/off equipment when not in use).
- Ensure that range hoods and exhaust fans are only running when the range is being used.
- Ensure that unused appliances are unplugged or on a power strip that is shut off.
- Determine if low-flow pre-rinse spray valves can be installed.
- Identify and assess opportunities to install variable frequency drives (VFDs) on kitchen hoods.
- Monitor and control all the equipment you can, and look into predictive diagnostics. Receive real-time alerts



## Refrigeration

- Your refrigeration is designed for worst case temperatures in your climate. Floating head and suction pressure controls react to actual ambient temperatures to maintain necessary temperatures for savings.
- Electronically commutated motors (ECMs) can be programmed to speed or slow motors based on cooling needs, offering significant savings over evaporator fans in walk-in coolers and over split capacitor and shaded-pole motors in refrigerated cases.
- Anti-sweat controls monitor both humidity and temperature and humidity to activate heaters in cooler and freezer doors only when needed to prevent condensation.
- Defrost Controls use sensors to intelligently sense when evaporator coils need defrosting, and only then consume the energy necessary to perform that operation.

### NOTES:

### TIP:

- Download the ENERGY STAR Guide for Cafés, Restaurants, and Institutional Kitchens.

### TIP:

- Use your Zip Code in the rebate finders for ENERGY STAR® and WaterSense® labeled products to check on utility or retail vendor cash rebates before you buy any products. Utilities may have pre-purchase application requirements.



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- Install strip curtains and keep condenser and evaporator coils clean.
- If possible, be sure heating equipment is not near cooling equipment.
- Identify worn and/or leaky door seals/gaskets on refrigerators and freezers. Close the door on a dollar bill or piece of paper, and if it is easily pulled out, replace the gasket.
- Check that refrigerator coils are clean and free of obstructions.
- Verify oven thermostat accuracy and have recalibrated if necessary.
- Establish and post operating procedures for cooking/baking equipment (for instance, preheating only when necessary, turning down/off equipment when not in use).
- Ensure that range hoods and exhaust fans are only running when the range is being used.
- Ensure that unused appliances are unplugged or on a power strip that is shut off.
- Determine if low-flow pre-rinse spray valves can be installed.
- Identify and assess opportunities to install variable frequency drives (VFDs) on kitchen hoods.
- Monitor and control all the equipment you can, and look into predictive diagnostics.



## Water: Hot and Cold

- Survey water use to identify major uses; find and fix any leaks—especially hot water leaks.
- Typically, set water heater temperature to 110 – 120 degrees or per local code to prevent scalds and to save energy and money.
  - Insulate 7-year or older water heaters and the first 3' of heated water "out" pipe.
- Consider "tankless" heaters (on-demand) for low-use areas, or solar and other efficient options.
- Check out ENERGY STAR water heating product information and calculators; find local retailers and rebates at [https://www.energystar.gov/products/water\\_heaters](https://www.energystar.gov/products/water_heaters).
- See EPA's WaterSense® program for water saving labeled products (faucets, commercial toilets and urinals), rebates, for indoor/outdoor water efficiency tips, and best practices at [www.epa.gov/watersense](http://www.epa.gov/watersense).
- Don't forget pre-rinse spray valves.

### NOTES:

### TIP:

- Look into the resources offered by the Green Restaurant Association.
- Visit the National Restaurant Association's Conserve Program for best practices, blogs, videos, tools & solutions, news & events and the most recent NRA State of Restaurant Sustainability Report.



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# Treasure Map FOR RESTAURANTS/COMMERCIAL KITCHENS

ADDITIONAL NOTES:



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