

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 “Convenience Store” 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.
 - 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>.
- Educate and encourage employees to report leaks, turn off lights not in use and to look for savings opportunities.
- Portfolio Manager does not have a module to score Convenience Stores on the 1-100 ENERGY STAR® scale, yet. However, national median EUI (Energy Use Intensity is approximately energy use/sq.ft.) for C-Stores is 592.6 for Source EUI (kBtu/ft²) and 231.4 Site EUI (kBtu/ft²). The EUI gives you a frame of reference to know when your savings take your use below national median for C-Stores. Many stores can do much better than the national median EUI.
- Use “start-up, shut-down” scheduling for house lights, kitchen equipment and heating/air-conditioning.
- 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.

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TIP:

- Download the ENERGY STAR Action Workbook for Small Business for more strategies, action items and ideas. Start and support an employee Green Team. Find resources to Build Your Own Competition for savings.
- Celebrate your success and recognize contributors, and 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 easily assess if any areas are over-lit or under-lit, compared to requirements or design levels.



- Run the numbers for savings on LED upgrades for canopy and exterior lighting, signage, in the ceilings, in-case lighting, restroom and storage.
- Evaluate the opportunity to upgrade to more energy-efficient lighting options everywhere:
 - 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 dimmable LED (especially for task lighting or specialty/decorative applications, such as ambient lighting in customer waiting area).
 - 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.
- Identify any lights that are routinely left on in unoccupied spaces (including offices, restrooms, storage, hallways, etc.) Consider opportunities to use automated lighting controls:
 - Occupancy/motion sensors for low-traffic areas, especially restroom and storage.
 - Timers or daylight sensors to turn off exterior and parking lot lights during the day.
- Confirm that lighting controls are installed to “see” what they must and are operating as intended.
- During the day, look for “day-burners” – 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.”
- 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 de-lamping any areas where lights are too bright, causing glare. De-energize and/or remove ballasts of fluorescent fixtures that are not in use.
- Review ENERGY STAR product information, calculators and find local retailers and rebates at <https://www.energystar.gov/products>; lighting, fans, and more lighting facts at www.energystar.gov/lighting.

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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.





Building Envelope

- Inspect doors and windows to identify gaps, cracks or other openings that can be weather-stripped, caulked, filled with foam insulation or, otherwise, closed. This includes doors, windows, HVAC system joints, vents, and ducts. The idea is to be sure any indoor/outdoor air-exchange is not accidental but is deliberate ventilation. Consider using a “smoke pencil” from the hardware store to detect leaks.
- If new windows must be purchased, consider the incremental costs and savings of high-efficiency windows – which will cost more but will save more in energy and heating/cooling costs.
- Generally, keep doors closed to the outside and to any unheated or uncooled areas.
- With “outside-to-inside” visibility in mind, consider installation of solar film on east and west windows that is of appropriate darkness to block summer heat gain for dollar savings, customer and employee comfort. Depending on your climate, you may even need to block winter heat gain on the south side in very warm climates.
- 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.



HVAC (Heating, Ventilation, Air-Conditioning)

- 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.

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TIP:

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



- 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 when the HVAC system is heating or cooling. The use of such personal devices may indicate larger heating or cooling 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.
- Determine if you already have or need professional savings estimates for HVAC Economizers, Advanced Digital Economizer Controls (ADECs), Demand Control Ventilation (DCV), and Enhanced Ventilation Controls (ECVs).
- Also ask about Variable Speed Drives (VSDs) to optimize the speed of motors in pumps and fans.
- See ENERGY STAR HVAC products and resources at https://www.energystar.gov/products/heating_cooling and evaluate the savings for higher SEER/IEER Rated equipment for new installations and retrofits.

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TIP:

- Controls are available for virtually all C-Store 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.
- Consider “load shedding” to avoid demand charges during your utility system’s “peak demand” time of day. This means understanding your utility’s time of day rates and avoiding the use of as much of your equipment as possible during this time. Ask your utility about programs and financial incentives for customers to avoid contributing to peak demand.





Office Equipment/ Plug Loads

- 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 knows 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 store anticipates purchasing new kitchen equipment, review the ENERGY STAR models, calculate savings and find rebates in advance.
- 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 it off when possible.
- 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. Many websites have "DIY" videos and instructions. Some replacement gaskets claim to be "universal" but it is best to purchase using the appliance brand and model number. Regularly clean the gasket with soapy water to keep it free of debris.
- Check that refrigerator coils are clean and free of obstructions.
- 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.

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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.



- Check out ENERGY STAR labeled water heaters, including “tankless/on-demand,” solar and other models and find local retailers and rebates.
- ENERGY STAR certified commercial coffee brewers offer as much as 35% energy savings and better temperature uniformity compared to conventional models, due to 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.
- 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.

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TIP:

- Search for stories on “sustainability” and “energy efficiency” at National Association of Convenience Stores.
- Read sustainability success stories and news releases offered by Progressive Grocer.
- At the Retail Industry Leaders Association search “sustainability” for the Sustainability Committee and Management Report, the Retail Horizons Project and the Capitalize Green toolbox.
- Find National Retail Federation sustainability blog posts, reports and press releases.



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.
- Regularly check the effectiveness of refrigerated case seals and consider automatic door closers.
- Electronically commutated motors (ECMs) can be programmed and potentially remote-controlled by an Energy Management System (EMS) 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 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.
- Install strip curtains and keep condenser and evaporator coils clean.
- Alcohol and soft drinks don't have to be chilled to the lower temperatures required for food.
- Refrigerated case lighting should be LED.



Water: Hot and Cold

- 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.
- Consider “tankless” heaters (on-demand) for low-use areas.
- Insulate 7-year or older water heaters and the first 3’ of heated water “out” pipe.
- Check out ENERGY STAR water heating product information and calculators; find local retailers and rebates at https://www.energystar.gov/products/water_heaters
- 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

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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.





Treasure Map FOR CONVENIENCE STORES

ADDITIONAL NOTES:

