Zero Waste for Restaurants

Waste

- Use refillable condiment dispensers instead of individual condiment packets for dine-in customers.
- Use the minimal amount of packaging needed for take out items. Whenever possible packaging should be made of recycled and recyclable materials. No styrofoam products.
- Buy food items and supplies in bulk whenever possible.
- Donate edible food to local food banks or shelters. Food no longer suitable for human consumption can be composted. If your restaurant regularly has a considerable amount of food waste (including grease and preparation waste) consider modifying serving portions, or setting up regular food recycling service.
- Purchase food, cleaning products, and other restaurant supplies in bulk.
- Use reusable hats for restaurant employees rather than disposable ones.
- Use reusable serveware for employee meals rather than disposable items.
- Use cloth towels for cleaning rather than paper towels.
- Ask your vendors about shipping your goods in reusable packaging or crates rather than disposable containers. Remember, packaging waste that enters your restaurant must also leave your restaurant.
- Use linen napkins, tablecloths, and placemats rather than disposable paper items. The cost of linen service is typically cheaper than the cost of purchasing disposable items.
- Serve drinking straws in covered dispensers rather than individually paper-wrapped straws.

Cooking Guidelines

Keep equipment clean. Carbon and grease build-up make your cooking equipment work harder and use more energy.

Before you start

Thaw your food – it will reduce cooking time which will save a great deal of energy.

Make sure all your cooking appliances, as well as the inside of your oven and the cooktop hotplates and burners, are clean. This promotes heat reflection and ensures you get the most out of the available heat.

Select the smallest appliance, where possible, for the cooking task. You may be surprised to learn that the grill in your stove uses up to three times more energy than your pop-up toaster.

And, if you plan to cook using aluminium foil, make sure the dull side is up.

On the Cooktop

If you use the smallest pot or pan for the job, it will take less time to cook the contents. Use pots and pans with flat bases that match the size of the element.

Opting for quick-heating, copper bottom pans will also reduce cooking time.

Using steamers and pot dividers means you can cook all your vegetables at once which saves time and energy.

In the Oven

We all like to check on food cooking in the oven – but resist the temptation unless necessary as each time you open the door you lose valuable heat so you'll need more energy to replace it.

It's a good idea to cook several dishes at once, that way you are making the best use of the heated oven.

Another good energy-saving hint is to check the seal on your oven door. While the oven is turned off, see if the oven seal will hold a piece of paper in place when the door is closed. If you can pull the paper out, the seal may need replacing.

If you are purchasing a new oven, consider a fan forced oven as it can generate up to 35% less greenhouse gases than conventional ovens. More items can also be cooked in a fan forced oven as heat is more evenly distributed.

Rangetop

- Whenever possible, do not use the rangetop. Instead, use other equipment, such as steamers and ovens that use less energy and add less heat to the kitchen.
- Use the right size pot. Never use a pot smaller than the burner. Electric burners or heating elements should be at least 25 mm less in diameter than the pot. On the other hand, oversized pots waste energy by exposing more metal surface to heat loss.
- Herd pots close together. Placing pots as close as possible on the rangetop will reduce heat loss and perhaps allow you to turn off a section of the rangetop.
- Cover all pots. Covering pots reduces heat loss and causes the food to cook faster.
- Do not preheat rangetops. Do not automatically turn on the rangetop the first thing in the morning. If preheating is necessary, 10 to 15 minutes is sufficient.
- Turn heat off early. Turn heat off a few minutes early; residual heat in the burner and pot will continue to cook the food.

Griddle

- Preheat griddle approximately 6 minutes. Six minutes is sufficient preheating time for a 350 degree F temperature. Heat only a portion of the griddle. If the griddle can be heated in sections, heat only the sections needed.
- Huddle food close together on the griddle to minimize heat loss.
- Cover griddled products to reduce cooking times and allow some items to be cooked on one side only.
- Covers on standby griddles will slow heat loss and conserve energy.

Oven

- Keep oven doors closed. Every second the oven door is open, the temperature drops 3 to 10 degrees. Load and unload products as quickly as possible.
- Do not use two ovens when one will do. Bake products requiring the same temperature in one oven.
- Avoid using a large oven for small amounts of food. Schedule baking and roasting to utilize the oven fully and shorten daily operating time.
- Do not preheat unless necessary. Preheating is usually necessary only for baking products; 15 to 20 minutes is sufficient.
- Do not set thermostat higher than needed. The oven will not heat up any faster; it will simply overheat.

- Do not use aluminum foil. Wrapping potatoes or other products in aluminum foil retards baking because the foil reflects the oven's heat. If foil is necessary, wrap the potato after it is baked.
- Fryer
- Fry from 300 degrees to 350 degrees F. Higher temperatures are inefficient. (For older fryers, the temperature may have to be set to 375 degrees F.) Idle fryers at 200 degrees F, to conserve up to 50 percent of energy use every hour. Melt fat and oil before frying by bringing it to the proper temperature in a steam-jacketed kettle. This is more energy efficient than using the fryer's coils to melt it. Keep fat above coils or elements. Be sure the fat level is kept above the coils or elements. If they are even partially exposed, 25 percent of the heat entering the fryer can be wasted. Have foods as dry as possible when frying. A large amount of energy is needed to change water droplets or ice on frozen products to steam. Blanch or precook foods in steamer. Food such as potatoes and chicken, can be partially cooked by steam and then finished and browned in a fryer. This will save energy, as a steamer is more efficient and uses less energy than a fryer.

Steam Cooking

- Steam is the most efficient form of cooking because it cooks moderately, transfers heat rapidly, requires little pre-heating, and shortens cooking time.
- Begin cooking in a steamer. Partially cook your product in there and finish it with your usual cooking method. Cooking with steam usually eliminates the need for preheating.
- Cover steam-jacketed kettles. Like pots used on the rangetop, steam-jacketed kettles should be covered.
- Avoid clouds of steam. Clouds of steam indicate unnecessarily high temperatures and put a further load on your ventilating and air conditioning system.
- Steam tables are energy wasters. Even though steam is efficient for cooking, steam tables used for serving consume more energy than any other piece of equipment. Do not preheat them longer than necessary, and turn them off when not in use.

Dishwashing

- Run the dishwasher only with full loads. During slack periods, use cold water rinse and stack dishes, pots, etc. until you have enough for a full load.
- Keep dishwasher temperature at the proper level. Using hotter water wastes energy.
- Turn dishwasher water heaters off when machine is not in use and at closing. It costs money to heat the water, whether it is used or not.
- Clean the dishwasher regularly. Check wash and rinse jets after each use. Empty scrap trays frequently. Use a delime solution regularly. Lime build-up clogs the wash and rinse jets

Refrigeration

- Separate food items into several categories depending upon the frequency they are needed; store infrequently used items away from frequently used items. For example, beef patties and french fries can be stored together in one refrigerator; other items used less frequently can be stored in another refrigerator. This is more energy efficient than storing them all in one large refrigerator.
- Label items to avoid searching with the door open.
- Do not set the thermostat below the needed temperature. Though doing this fractionally decreases the freezing or cooling time, it uses significantly more energy.

- Let hot items cool briefly on a counter before placing them in the refrigerator. Conversely, thaw frozen food in the refrigerator. The frozen food will reduce the load on your refrigerator and in winter food thawed at room temperature may add a heating load to the HVAC system.
- Do not store food in a way that it blocks circulation within the refrigerator. Use several trays so that cold air can circulate well over all the products.
- Locate the refrigeration equipment away from sources of heat such as ovens and grills.
- Clean the condenser fins and coils regularly. Dust and grease buildup inhibits heat transfer.
- Keep the refrigerator level. This helps the doors to fit correctly.
- Feel the outside of the refrigerator for cold spots. Cold spots indicate that the insulation has either shifted or is waterlogged and should be adjusted or replaced.
- Check the gaskets regularly. If a piece of paper inserted between the door and frame can be pulled out easily, the gasket is not sealing properly and should be replaced.
- Check the evaporator for frost. Ice buildup robs the evaporator of its effectiveness. Most units have automatic defrosters. They can be reset to defrost after operating hours. Defrost whenever ice buildup exceeds 6 mm.
- Keep refrigerators at least 10 cm from walls so that air can circulate freely around the condenser coils.

Maintenance

- Check all thermostats. Check thermostats with a thermometer and adjust them if necessary.
- Keep gas flames adjusted. Properly adjusted gas flames should be all blue with a firm center cone. A yellow-orange tip means that some gas is not being burned. There should be no visible smoke.
- Inspect pipes regularly for leaks. Hot water and steam leaks are great energy wasters. Replace all valves or gaskets that show leakage. Replace washers in dripping water faucets.
- Check overheating ovens. Ovens that become excessively hot on the exterior surface have insufficient or deteriorated insulation, which should be replaced. Also check oven door gaskets for a tight fit.

Hot Water

- Heat water for hand washing to 110 degrees F instead of 140 degrees F. Do not reduce the temperature of water serving the dishwasher.
- Install flow restrictors or aerators in piping and on faucets. These can reduce flow by about 50 percent.
- If renovating, consider installing self-closing faucets on water taps. These can cut water consumption approximately 60 percent.
- Insulate new piping and insulate and/or repair existing hot water piping and tanks. In a system with about 70 m of piping, good insulation will save approximately R150 to R250 per year.
- If a domestic hot water circulating pump is used, provide a time switch to turn off the pump when the building is unoccupied.
- Drain and flush water heaters every 6 months to remove minerals that have settled on bottom of tank. This will maintain heater efficiency.
- Repair leaky faucets. A hot water faucet dripping at the rate of 5 litres an hour consumes 45,000 litres per year, and at least R300 to R1200 in energy.
- Turn off water heaters when the restaurant is closed. Install timers to turn water heaters off when the restaurant is closing and to turn them on 2 hours before opening to reach the desired temperature.
- Insulate the water heater tank. Except for reducing the amount of hot water used, tank insulation may be the best energy conservation opportunity for water heating. Insulation kits

cost as little as R100 to R250 (depending on size) and will pay for themselves in energy savings in 12 months or less. If you wrap a gas water heater make sure not to cover air intake or exhaust areas. Call your supplier for details.

Reducing heat/cold loss

- Caulking seals the cracks between door and window frames, between brick and siding, and other places where different building materials meet. Use good quality silicon caulk that will last.
- Use vinyl, metal, felt, or other fibrous material to minimize infiltration around operable penetrations in the building shell (doors and windows). For residential-type commercial buildings (stud walls), infiltration around electrical outlets is significant. Apply foam rubber gaskets to all electric wall outlets and switches.
- Hot water pipes and tanks and air conditioning ducts should be insulated to prevent unnecessary load on the air conditioning system.
- Shading, screens, or films over windows reduce the entering heat.
- Drapes, blinds, shutters or awnings on the interior help reduce radiant gain, but they are not nearly as effective as exterior window treatment

List of packaging items and alternatives.

Current Item	Suggested Substitution
Plastic stir sticks	Metal spoons, Wooden stir sticks for takeaways
PC salt and pepper	table-sized S & P shakers/general use
Plastic	Paper (waxed OK) or wood
Sytrofoam/Polystyrene	Paper (waxed OK) or wood
Cling Wrap	aluminum foil/wax paper
Straws	avoid, or paper ones are preferable
Hot Styrofoam/treated cups	reusable mugs - paper cups
Boxes from box lunches	paper bags (not plastic) for bag lunches
Plastic jar lids (i.e., mayo)	metal jar lids
Condiments in individual packages	bulk/general use
Beer/juice cans in 6 pack	without plastic – call vendor
Glass jars of olives/syrup/vanilla/liquor, etc.	preferred in bulk
Paper napkins, plates, etc.	recycled-content paper napkins, plates, etc.
Hot cup warmers	reusable souvenir mugs
Styrofoam / Poly Styrene clamshells	paper boxes
Drink boxes	glass bottled or canned juices
Foil bags (peanuts/popcorn)	waxed paper bags
Milk and juice that come in 'boxes' made of aluminium, card and plastic	cans or glass

(This document built upon the fine work done by Earthlife Africa at the World Summit on Sustainable Development 2002)

What is the Institute for Zero Waste in Africa?

Our Mission Statement

Working towards a world without waste through public education and practical application of Zero Waste principles.

Charter Principles

1. Redesign products and methods of production to eliminate waste by mimicking natural processes and developing closed-loops
2. Convert waste to resources for the benefits of local production and the creation of a healthy and sustainable society.
3. Resist incineration and land filling in order to promote innovation in resource conservation and methods of production
4. Collaborate with others with common interests worldwide

Objectives

1. To advance the education of the public by all appropriate communication means and through supporting the elimination of waste and the associated health impacts.
2. To promote and fund appropriate research for the public benefit, including education
3. To promote the effectiveness of other Zero Waste initiatives
4. To promote the principles of waste avoidance and minimisation, re-use, repair, recycling and composting, through sustainable resource management in accordance with best environmental options.

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