

Green Camps Initiative Sustainable Kitchen Presentation

A guide to support camps in implementing the concepts of sustainability into the operation of your kitchen.

Contents:

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Types of Energy Star Equipment

Dishwashers

Savings Potential	Energy Star Rating	Energy Star Features	Savings Tips	Resources
An average of \$3,000/year	40 % more energy efficient 40% more water-efficient	<ul style="list-style-type: none"> Meet maximum water consumption requirements during the final rinse Use less energy while idling between wash cycles. 	<ul style="list-style-type: none"> Run only when full Assess need for pre-rinse Use the right detergent Use the right cycle Keep your dishwasher clean 	Energy Star Dishwasher Factsheet



Hot Food Holding Cabinets

Savings Potential	Energy Star Rating	Energy Star Features	Savings Tips	Resources
\$300 per year \$2,800 over product lifetime	70% more energy efficient	<ul style="list-style-type: none"> Better insulation Better temperature uniformity Magnetic door gaskets Auto-door closures Dutch doors 	<ul style="list-style-type: none"> Shut off overnight Use the Timer Replace missing or worn out control knobs 	Energy Star Holding Cabinet Factsheet



Commercial Fryers

Savings Potential	Energy Star Rating	Energy Star Features	Savings Tips	Resources
Standard Size: 1,100kWh/year (\$100) 50 Mbtu/year (\$470) Large Vat: 1,790 kWh/year (\$170) 58 Mbtu/year (\$500)	35 % more energy efficient	<ul style="list-style-type: none"> shorter cook times higher production rates advanced burner heat exchanger designs fry pot insulation 	<ul style="list-style-type: none"> start-up/shut-down schedule 	Energy Star Fryer Factsheet



Griddles

Savings Potential	Energy Star Rating	Energy Star Features	Savings Tips	Resources
<p>Gas: \$120/year, \$1,100/lifetime</p> <p>Electric: \$100/year, \$1,200/lifetime</p> <p>Good practices: Can save \$250 annually from a gas griddle by cutting three hours of idle time per day.</p>	10% more energy efficient	<ul style="list-style-type: none"> Improved uniformity of temperature across the griddle plate and a higher production capacity. Highly conductive or reflective plate material Improved thermostatic controls Strategically placing thermocouples 	<ul style="list-style-type: none"> Reduce idle time by turning the griddle down or off during periods of slow production Calibrate griddle controls to operate at the correct temperature Replace missing control knobs 	<p>Energy Star Griddle Factsheet</p>



Steam Cookers

Savings Potential	Energy Star Rating	Energy Star Features	Savings Tips	Resources
<p>Gas and Electric: \$510 Annually (4,930 kWh or 33MBtu)</p> <p>Water Savings: Uses 3 gallons compared to 40 gallons for standard models</p>	50 % more energy efficient 90% more water efficient	<ul style="list-style-type: none"> Shorter cook times Higher production rates Reduced heat loss due to better insulation More efficient steam delivery system 	<ul style="list-style-type: none"> start-up/shut-down schedule 	<p>Energy Star Steam Cooker Factsheet</p>



Ice Makers

Savings Potential	Energy Star Rating	Energy Star Features	Savings Tips	Resources
<p>Batch-Type: 1,200kWh annually (\$130)</p> <p>Continuous-Type: 1500kWh annually (\$160)</p> <p>Water Savings: \$40/year and 6,300 gallons/year</p>	15 % more energy efficient 23 percent more water efficient	Meet maximum potable water and energy consumption limits.	<ul style="list-style-type: none"> Clean the condenser coils Wash the ice-making parts Regularly monitor and descale pipes. 	<p>Energy Star Ice Maker Factsheet</p>



Ovens

Savings Potential	Energy Star Rating	Energy Star Features	Savings Tips	Resources
<p>Electric: 1,870 kWh annually (\$190)</p> <p>Gas: 30MBtu annually (\$360)</p>	20 % more energy efficient	<ul style="list-style-type: none"> • Minimum cooking energy efficiency - amount of energy absorbed by the food product compared to the total energy used by the oven during the cooking process. • Maximum idle energy rates - energy used by the oven while it is maintaining or holding at a stabilized operating condition or temperature. 	<ul style="list-style-type: none"> • Cook in batches • Keep the oven closed while cooking • Defrost frozen food in fridge overnight • Get to know your oven's pre-heat time • Pre-boil potatoes before roasting • Use glass or ceramic dishes • Cut food into smaller pieces • Use fan assist cooking option • Turn electric ovens off 10 minutes before the end of the cooking time. 	<p>Energy Star Oven Factsheet</p>



Refrigerators and Freezers

Savings Potential	Energy Star Rating	Energy Star Features	Savings Tips	Resources
<p>Replacing all commercial refrigerators and freezers sold in the US would save \$790 each year and prevent 17 billion pounds of greenhouse gas emissions (1.7 million cars)</p>	40% more energy efficient	<ul style="list-style-type: none"> • ECM evaporator • Condenser fan motors • Hot gas anti-sweat heaters • High-efficiency compressors. 	<ul style="list-style-type: none"> • Door Flaps • Door Seals • Cover Everything • Let your food cool before putting it away • Adjust the thermostat • Keep refrigerator in cool location • Check power-saver switch • Minimize frost build-up • Keep your freezer full • Label for easy and quick access 	<p>Energy Star Refrigerator and Freezer Factsheet</p>



Sustainable Kitchen Tips

Energy Efficiency Cooking

- Match the Cooking Method to the Meal
- Match the Pan Size to the Element Size
- Buy Sturdy, Flat-Bottomed Cookware
- Use High-Conductivity Materials
- Keep Your Stovetop Clean and Shiny
- Reduce your Cooking Time...(Defrost)

Buy Local

- It's better for everyone's bottom line
- It supports the future of farming
- It promotes biodiversity
- It promotes cultural diversity
- It empowers consumers
- It promotes a greater sense of family
- It boosts our well-being
- It tastes better!

Bulk Purchasing

- Reduce packaging waste
- Plan out food use
- Good food storage systems

Start-up Shut-Down Schedule

Implement a startup/shutdown plan to make sure you are using only the equipment that you need, when you need it.

Conserve Hot Water

- Install On-Demand Heater
- Install aerating, low-flow faucets
- Repair leaky faucets promptly
- Set the thermostat on your water heater to 120 degrees F
- Insulate hot-water storage tank
- Insulate first 6 feet of the hot and cold water pipes connected to the water heater.
- Install heat traps on the hot and cold pipes at the water heater
- Drain a quart of water from your tank every 3 months to remove sediment that impedes heat transfer and lowers heater efficiency.
- Solar water heaters reduce energy consumption to heat water.

Energy Assessment

- Local utilities will often do a free energy assessment for your site.
- Green Camps Initiative offers camp specific energy audits.
- Use online calculators to estimate energy savings potentials

Retrofit your old equipment

- Refrigerator curtains
- High-efficiency evaporative fan motors
- Variable-speed hood fans
- Low flow pre-rinse spray valves

Staff Training

- Train kitchen and support staff how to implement sustainable kitchen practices

Sustainable Kitchen Products

Plates & Utensils

- To-Go Ware
- Compostable
- Re-Useable

Reusable containers

What do you currently do with your leftovers?

[Article on Reusable Containers vs. Plastic Wrap](#)

Chopping boards

- Recycled Paper
- Recycled Plastic
- Reclaimed or salvaged wood
- Sustainable Wood
- Cork

[Top 5 Ecofriendly Cutting Boards](#)

Pressure Cooking

- Foods retain most of their nutrients and are tastier
- Saves energy because they are more efficient and take less time to cook.
- Doesn't heat up your kitchen
- Can use to preserve foods

[10 Tips to get the most out of your pressure cooker](#)

Bulk Item Containers

- Appropriate storage will allow you to store bulk foods and extend their shelf life.

Coconut Oil

- Healthier and more sustainable alternative to traditional cooking oils

[Coconut Oil Benefits](#)

Rapadura

- Unrefined cane sugar
- Not heavily processed
- Slightly richer in some nutrients than white sugar
Should still be consumed in moderation

[Health Benefits of Rapadura Sugar](#)

Books

- Sustainable Cooking
- Healthy Recipes
- Vegetarian Recipes

Food Dehydrator

- Preserve Food by drying

[Choosing a Food Dehydrator](#)

Straws

- Reduce the use of plastic straws where possible
- Sell reusable straws in the camp store

Sustainable Kitchen Practices

Food Sourcing

Organic Gardening

[A Beginner's Guide to Organic Gardening](#)

[Summer Camp Gardening on Pinterest](#)

Herbs Gardens

[10 Best Indoor Herbs](#)

[Growing Herbs and Spices](#)

[Kitchen Herb Gardens on Pinterest](#)

Buy Locally

[Ten Reasons to Buy Local Food](#)

Sprouting Jars

[Sprouting 101](#)

[Benefits and Drawbacks](#)

Canning

[Guide to Canning](#)

[9 Reasons to Can Your Own Food](#)

[Top 6 Benefits of Pressure Cooking](#)

Green Cleaning

[14 Green Kitchen Cleaning Tips](#)

[Make your own Green Kitchen Cleaners](#)

[Do Green Kitchen Cleaners Really Work](#)

Food Waste

In the Kitchen

- Create guidelines or implement a system to ensure you only purchase what you need, when you need it.
- Consider strategies for reducing prep waste
 - Improving knife skills of staff
 - Purchasing pre-cut food
 - Reducing batch size when reheating foods like soups or sauces
 - Training staff to reduce improperly cooked food.
- Consider secondary uses for excess food
 - Leftover bread => croutons
 - Excess rice => Left Over Uses
 - Leftover fruit => dessert topping
 - Vegetable trimmings => base for soups, sauces and stocks
- Ensure proper storage techniques
 - Store in proper condition (temperature)
 - Organized to easily access
 - Track inventory
 - Ensure older products are used first.

In the Dining Hall

- Educate your guests why and how to reduce food waste.
- Tracking what food is frequently left uneaten or sent back.
- Change serving sizes
 - Reduce the scoop or serving size
 - Use an "ask first" policy
- Measure the amount of food waste produced at each meal to track

Resources

Energy Star

<http://www.energystar.gov/>

Much of the information from the guide regarding commercial kitchen appliances came from the Energy Star Website

[Energy Star Guide for Restaurants](#)

[Savings Fact Sheet](#)

[Energy Star Rebates](#)

[Distributor Partner List](#)

[Savings Calculator](#)

Food Service Technology Center (Fishnick)

<http://www.fishnick.com/>

[DIY Energy Survey](#)

[Educational Seminars](#)

Sustainable Food Service

<http://www.sustainablefoodservice.com/>

Paul Kuck is a wealth of knowledge on sustainable kitchens and his website provides a great overview of things related to sustainable kitchens

[Main Site](#)

[Restaurant Tools](#)

[Green Cleaning](#)

Other Sources

www.kitchensustainability.com

www.foodservicewarehouse.com

www.Treehugger.com

<http://www.aceee.org/consumer/cooking>

<http://www.greenlivingonline.com/article/benefits-buying-local-food>

<http://www.epa.gov/foodrecovery/fd-reduce.htm>

<http://www.air-n-water.com/faq-tankless-water-heater-facts.htm>



Green Camps Initiative

<http://www.greencampsinitiative.org>

