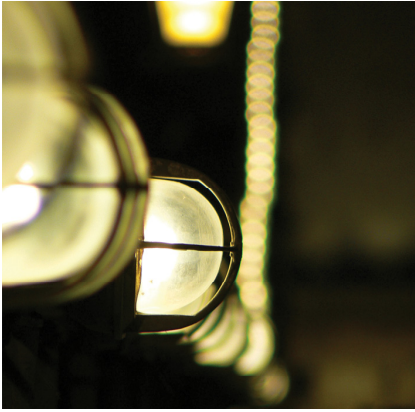


Smart Purchases Big Impact

Sustainable Purchasing Guide
Food Service Equipment

Sustainability... your university, your world

A stylized black silhouette of a tree with many leaves.



Introduction

This section provides information on currently available **food service equipment** options that can help to move the University of Saskatchewan toward its sustainability goals. Living within the boundaries of our sustainability objectives requires us to apply two main strategies:

- Dematerialization** requires that we reduce the amount of materials as much as possible; and that we continually move toward the use of 100% recycled content.
- Substitution** requires that we find less harmful materials to replace those that currently damage and are not recyclable.

Sustainable purchasing is about including social, environmental, financial and performance factors in a systematic way. It involves thinking about the reasons for using the product (the service) and assessing how these services could be best met. If a product is needed, sustainable purchasing involves considering how products are made, what they are made of, where they come from and how they will be used and disposed.

Finally, remember that this is an evolving document – it will change with new information as our understanding of sustainability impacts and potential solutions improves.

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**Smart Purchases
Big Impact**

Wherever possible **CHOOSE** products that employ a combination of characteristics listed in the left hand column, and **AVOID** products that demonstrate characteristic in the right-hand column.

CHOOSE	AVOID
<ul style="list-style-type: none"> Energy Star approved Recyclable products Durable, long-lasting equipment 	<ul style="list-style-type: none"> High plastic content

Option: Choose Energy Star Approved Energy and Water Efficient Equipment
Strategy: Substitution and Dematerialization (SO 1, 3)

ENERGY STAR, originally developed by the U.S. Environmental Protection Agency and the U.S. Department of Energy, includes energy-efficient usage standards for commercial kitchen equipment. ENERGY STAR prescribes voluntary energy efficiency standards for certain commercial kitchen appliances including: dishwashers, refrigerators, freezers, ice machines, holding cabinets, steamers and fryers.

Option: Choose Recyclable and Repairable Products
Strategy: Dematerialization (SO 1, 3)

Choose appliances that have been produced with materials that have a higher end-of-life value, such as steel (as compared to plastic) that are more readily recycled. Avoid "hybrid" materials comprised of two or more different materials such as conductive thermoplastic. Products made of single material are easier to reuse or recycle. Some products are easier to replace or repair which saves money and avoids the need to completely dispose of the appliance.

Option: Choose Durable Appliances with Long-Term Warranties
STRATEGY: Dematerialization (SO 1, 3)

Choosing products with a long functional life and maintaining them regularly will extend the life of appliances. Maintaining a long appliance life will reduce waste and save on the energy it takes to produce a new product. Look for manufacturers that provide longer term warranties.

Regular maintenance and cleaning will ensure fans, air exchangers and other working parts are running efficiently and will minimize wear and tear on the machine.

Arriving at the currently preferred options

1. Identify the service

Food service equipment enables food preparation and storage.

2. Assess the need

The University of Saskatchewan provides food services to students, faculty, staff, campus events and conferences. It is important to have proper handling, preparation and storage equipment to ensure the safety and quality of the food provided. Food service equipment is also used in some areas of research.

3. Identify the contents

The most common material found in most food service equipment (by weight) is **steel**. This is a major factor in the current economic viability of recycling such equipment. The plastics content of this equipment is increasing and it is likely that in the future, there will be fewer metals and more plastics entering the waste stream as a result of appliance disposal.

Small amounts of **aluminum** and **copper** may also be present. Food Service Equipment commonly contains some **glass**, but the glass is usually treated for heat resistance by mixing a heavy metal with the glass, which reduces the recyclability of the glass. Some lead, PCBs and other potentially harmful materials are usually found in trace amounts as well.

4. Identify sustainability impacts

i.systematically increasing concentrations of substances from the earth's crust?

- Most food service equipment uses electricity to operate. In Saskatchewan, this electricity is largely derived from **coal**, a fossil fuel, therefore leading to an increase in concentration of substances from the earth's crust in nature (CO₂, CO and SO_x). Increasing concentrations of these substances in nature contribute to climate change and acid rain.
- The **petroleum or natural gas** used as feedstock for most plastics is extracted from the earth's crust at a rate much greater than it is re-deposited back into the earth's crust.
- Fossil fuels are combusted to provide energy during the extraction of raw materials, transportation and the production of food service equipment.

ii.systematically increasing concentrations of substances produced by society?

- If the **plastic** used in food service equipment is not recycled, it usually ends up in landfills or incinerators. The plastic persists in the environment after it is used and discarded, contributing to an increase in concentration of human-made substances in nature, displacing people and affecting natural ecosystems.
- The combustion of fossil fuels produces a number of **chemical compounds** (e.g. nitrogen oxides) that build up in the atmosphere.

iii.systematically degrading nature by physical means?

- The **extraction** of fossil fuels and virgin metals/minerals may systematically degrade nature, particularly where mining disturbs land that is not reclaimed and restored.
- Plastic components found in food services equipment are petroleum based and use fossil fuels as a feedstock material. The manufacturing processes of plastic leads to the physical degradation of nature. The plastic used in food service equipment usually ends up in landfills or incinerators. The plastic persists in the environment after it is discarded.

iv.systematically undermining people's ability to meet their basic human needs?

- A number of the compounds produced by the combustion of fossil fuels (e.g. nitrogen oxides, carbon monoxide, and sulfur oxides) can negatively **affect human health**.
- Millions of food service appliances are sent to the landfills each year. Ongoing reliance on landfills as a form of waste management will require more and more physical space, displacing humans and destroying natural areas and ecosystems.

5. Envision sustainable food service equipment

In principle, sustainable small appliances would feature:

- No components that are derived from the earth's crust (e.g. petrochemicals and metals), unless those ingredients are 100% captured and reused.
- No components that are persistent in nature (e.g. plastic), unless those substances are 100% captured and reused.
- In the case of dishwashers, using cleaning processes that do not rely on chemical cleaners that may include substances that are persistent in nature.
- Refrigerants that do not cause harm to the ozone layer and human health

continued on page 3...



A production process that:

- Does not contribute to the increased concentrations of substances from the earth's crust or the buildup of persistent compounds in nature,
- Uses only sustainable renewable energy or energy produced in a carbon-neutral manner;
- Does not rely on practices that systematically physically degrade land and ecosystems
- Does not rely on practices that undermine people's capacity to meet their basic needs

6. Identify and prioritize alternatives

To identify the best options, review the Current Options on page one and choose the most appropriate alternative by using the following three criteria for assessment:

- a) Does the product or service move us in the right direction with regards to our four Sustainability Objectives?
- b) Does the product or service create a flexible platform for the next step toward sustainability?
- c) Is the decision financially viable?

Resources and Additional Information

1. Green Education for the Commercial Kitchen
<http://www.foodservicewarehouse.com/education/going-green/default.aspx>
2. Natural Resources Canada Case Study
<http://oee.nrcan.gc.ca/commercial/equipment/commercial-kitchen/cooking-equipment/13231>
3. Health Canada – Polychlorinated Biphenyls
<http://www.hc-sc.gc.ca/hl-vs/iyh-vsv/environ/pcb-bpc-eng.php>
4. Energy Star Products
http://www.energystar.gov/index.cfm?c=products.pr_find_es_products



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