



# GREEN SEAL" STANDARD FOR RESTAURANTS AND FOOD SERVICES

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# **GREEN SEAL<sup>TM</sup> STANDARD FOR RESTAURANTS AND FOOD SERVICES (GS-46)**

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#### List of Acronyms and Terms

**ARI.** Air-Conditioning and Refrigeration Institute **BTU.** British Thermal Units **CEE.** Consortium for Energy Efficiency CFC. Chlorofluorocarbon **CFL.** Compact Fluorescent Lamp CHPS. Collaborative for High Performance Schools **CRI.** Carpet and Rug Institute **DOE.** United States Department of Energy **ENERGY STAR.** A joint United States Environmental Protection Agency and the United States Department of Energy program aimed to help save money and protect the environment through energy efficient products and practices. **EPA**. United States Environmental Protection Agency **EPEAT.** Electronic Products Environmental Assessment Tool **EUI.** Energy Use Intensity **GHG.** Greenhouse Gas GPF. Gallon Per Flush **GPM.** Gallon Per Minute **GREENGUARD**. The certification program run by the GREENGUARD Environmental Institute as an industry-independent, third-party testing program for low-emitting products and materials. **HVAC**. Heating, ventilation and air conditioning **IEEE**. Iinstitute of Electrical and Electronics Engineers **IPM**. Integrated Pest Management ISO. International Organization of Standardization LEED. United States Green Building Council's Leadership in Energy and Environmental Design Certification, applies for new construction projects or existing buildings. MPG. Miles Per Gallon MSC. Marine Stewardship Council PG&E. Pacific Gas and Electric Company **SCS.** Scientific Certification Systems **USDA.** United States Department of Agriculture

# **GREEN SEAL<sup>TM</sup> STANDARD FOR RESTAURANTS AND FOOD SERVICES (GS-46)**

# 1.0 SCOPE

This standard establishes environmental requirements for restaurants and food service operations that have been operating for at least three months whose primary business is preparing and serving food to the general public or private consumers. This includes full-service, limited-service, non-commercial, and catering operations. Lodging property food services are included in this standard. This standard does not include bars, vending, grocery stores, or convenience stores.

Each criterion applies to all operations, including full-service, limited-service, non-commercial, and catering, except where specifically noted. Some criteria state "where applies" and are not required when a criterion, mandatory or option, is not relevant (e.g., the Responsible Seafood requirement does not need to be met by operations that do not serve seafood) or it is not under the control of the operation such as when the operation runs in a leased or rented facility. Where a criterion conflicts with local code or regulations, the latter takes precedence.

There are three certification levels achievable in this standard: bronze, silver, and gold. The three levels are sequential and not all criteria are required for all levels. Each subsequent level (e.g., bronze to silver) assumes the requirements for the previous level in addition to the requirements outlined for its own level. For example, silver includes all bronze criteria plus the silver requirements. If criteria overlap for different levels (i.e., silver and bronze criteria) the stricter requirement is applied if the operation wishes to obtain the higher certification level. Bronze only needs to complete the mandatory requirements. Silver and gold must complete additional requirements noted in the standard.

# 2.0 DEFINITIONS

**Agricultural Residue.** Material remaining from a plant after it was used to produce food or fiber.

**All-You-Care-To-Eat Operations.** Operations where the customer pays a single fee which allows them to select from a range of food options in whatever quantities desired. This type of restaurant often includes cafeteria-style serving equipment allowing patrons to select from food and drink items on display in a continuous cafeteria line.

Alternatively-Fueled Vehicle. A vehicle that runs predominantly or exclusively on compressed natural gas, biodiesel from recycled vegetable oil, or electrically-generated power as demonstrated by fuel purchase records and mileage records for the vehicle(s). Gasoline purchases for the vehicle(s) shall not exceed the amount required to drive the vehicle(s) 15% of the miles driven annually.

Animal-Based Food. Meat, dairy (e.g., milk, cheese), and eggs.

**Carbon Offsets.** Projects or processes that reduce carbon dioxide  $(CO_2)$  emissions, or equivalents, that are developed and/or certified by a third-party certification program (see Appendix B for examples of programs). A successful project is issued credits for its  $CO_2$  reduction (usually one credit equals one ton of abated  $CO_2$ ) and these credits can be purchased by an individual or restaurant to help mitigate or offset the individual's or restaurant's own greenhouse gas emissions.

**Catering.** Establishments primarily engaged in providing event-based food services on or offsite, and usually involve either plated or buffet style service.

**Compostable.** Food or other organic material capable of undergoing biological decomposition in a compost site, such that the material (i.e., feedstock) is not visually distinguishable and breaks down to carbon dioxide, water, inorganic compounds, and biomass, at a rate consistent with known compostable materials. Non-food products claiming to be compostable shall be certified as such by a third-party certification program (see Appendix B for examples of programs).

**Cost-Effective.** The least cost alternative means for achieving the same stream of benefits for a given objective. Producing positive results in proportion to the expenditure of resources (e.g., time, money, materials) and having a return on investment period acceptable to the operation (e.g., three to five years).

**Direct Business.** Aspects of the operation that provide greater than 50% of the revenue.

**Directly-Purchased.** The transaction of procuring food at the farm or farmer's market, or other means where there is no intermediary party needed for the transaction, and the food travels less than 200 miles to the operation. Multiple-component processed food (e.g., tomato sauce) must include at least 75% of the components (by weight) produced and processed from less than 200 miles to the operation.

**Efficient Transport.** Distribution of products either with alternatively-fueled vehicles, fuelefficient vehicles, hybrid-electric vehicles, or an EPA SmartWay partner.

**Energy-Efficient Appliances**. This includes appliances, but not limited to, that are ENERGY STAR qualified (e.g., fryers, steamers, ice machines, holding cabinets, dishwashers, solid door refrigerators and freezers, or ceiling fans that currently earn the ENERGY STAR) or appliances that meet the energy efficiency outlined by PG&E Food Service Technology Center (e.g., ovens), Consortium for Energy Efficiency, or equivalent. Appendix C provides examples of energy-efficient appliances.

Energy-Efficient Lighting. Bulbs that provide high luminous efficacy (e.g., 50 lumens per

watt), high average rated life (e.g., 10,000 hours for CFL retrofits, 25,000 hours for LED-based fixtures), and a minimum color rendering index of 80. This includes, but is not limited to, ENERGY STAR qualified and Green Seal certified lights. Appendix D provides examples of energy-efficient lights.

**Environmentally-Preferable.** A product or service certified as such by a Type 1 (i.e., thirdparty) environmental label that was developed in accordance with the ISO 14024 Environmental Labeling Standard. Alternatively, a product or service may be designated as environmentally preferable by an established and legitimate nationally-recognized third-party certification program developed with the purpose of identifying environmentally preferable products. The program must not have any financial interest or stake in sales of the product or service, or other conflict of interest. The standard must be appropriate, meaningful, and based on the product's life cycle with consideration of human health and safety, ecological toxicity, other environmental impacts, and resource conservation. Product criteria must be publically available, developed with stakeholder input, and distinguish market leadership for that product category. Certification must be completed by a third party, include site inspections, and have a monitoring program to verify ongoing compliance. Examples of programs that meet this definition are included in Appendix A.

Employees. Paid part-time and full-time help: does not include contractors or volunteers.

**Food.** Edible items (e.g., meals, snacks, dessert) and beverages, including, but not limited to, carbonated beverages, bottled water, flavored water, and alcoholic beverages.

**Food Service.** All establishments, types of businesses, and services that prepare and serve food away from a patron's home. This includes full-service, limited-service, non-commercial, and catering operations.

**Forecasting.** The process of using historical data to estimate future needs. This is done to determine precise purchasing, production, and labor needs, reducing waste and costs.

**Fuel-Efficient Vehicle.** A vehicle performing in the top 25% in fuel economy (mpg) for its specific vehicle class according to the DOE/EPA Fuel Economy Guide.

**Full-Service Operations.** Establishments that sell food and service (with wait staff) to customers at tables, counters or booths on the premises; includes casual, theme, family dining, and fine dining restaurants, as well as the take-out service from these establishments.

**Greenhouse Gas (GHG).** Gases that trap heat in the atmosphere, including carbon dioxide, methane, nitrous oxide, sulfur hexafluoride, hydrofluorocarbons, perfluorocarbons, chlorofluorocarbons, and ozone.

**Humanely-Raised.** Food products originating from animals that were raised with their welfare and the safe production of food products in mind. The animals are not fed antibiotics, growth hormones, or feed enhancement; the animals are not confined; and the animals have free access to fresh food and water. Examples of programs that meet this definition are included in Appendix B.

**Hybrid-Electric Vehicle.** A vehicle that runs on a combination of electrically-generated power and gasoline.

**Integrated Pest Management (IPM).** The use of the least toxic chemical pesticides and minimum-use of chemicals to eradicate pests; chemicals used only in the challenged locations and only for targeted pest species.

**Intermediary Party.** A broker or distributing company that coordinates most levels of procurement for a food service operation such that the food service operation has limited to no interaction with the food producer/processer. This does not include delivery services or other means that provide efficient transport or consolidated deliveries of products, provided there remains direct interaction between the producer/processor and food service operation.

**Limited-Service Operations**. Establishments whose patrons generally order or select items and pay before eating. Food and drink may be consumed on premises, taken out, or delivered to customers' locations. This segment consists of fast-food, quick-service, fast-casual, cafeterias, and buffets.

**Locally Packaged.** Ready-to-drink beverages prepared and packaged by businesses with cultural ties to the geographic region of the food service operation. The packaged beverages are transported no more than 100 miles to the operation.

**Low-Emitting.** Products that have been tested and meet or exceed applicable product emissions standards (such as CHPS) through a third-party certification program or an independent laboratory (e.g., GREENGUARD, SCS, CRI).

Meat. Fish, poultry, pork, lamb, beef, and other foods derived from animal flesh.

Menu. List of items available for selection by a customer.

Merchandising. Displaying products or items for sale and viewable by the customer.

**Non-Commercial Operations.** Establishments where food is prepared/served as an adjunct, supportive service to the primary purpose of the establishment. Payment may, or may not, be made for this service by its customers. These include such operations as schools, colleges/universities, military, hospitality, hospitals, continuous care facilities, airline food service, train and boat food service, and penal facilities.

**Operation.** A food service business including, but not limited to full-service operations, limited-service operations, catering, and non-commercial establishments.

**Organic**. Contains at least 95 and 100% USDA certified organic ingredients, as defined by the USDA National Organic Program.

**Post-Consumer Material.** Material that would otherwise be destined for solid waste disposal, having served its intended use. Post-consumer material does not include materials and by-products

generated from, and commonly reused within, an original manufacturing and fabrication process.

**Post-Consumer Waste.** Items discarded by customers, including food after it was sold or served and used service ware and packaging.

**Potable Water.** Water that is suitable for drinking: meets or exceeds applicable water quality regulations.

**Pre-Consumer Waste.** Items discarded by staff within the control of the foodservice operator. This includes all waste in the back of the house such as overproduction, trim waste, expiration, spoilage, overcooked items, contaminated items, dropped items, packaging, and supplies. This also includes all waste in the front of the house that has remained under the control and custody of the foodservice operator, including items on cafeteria stations such as salad bars, steam wells, self-serve deli stations, mis-ordered product (e.g., erroneous grill orders never served), expired grab-and-go items, packaging, and unused service ware. Leftover catering items would be preconsumer waste if they remain on the catering line and have not been received by an individual customer.

**Priority Food Purchases.** The largest purchases, based on cost, in all main food categories (e.g., produce, meat, fish, dry goods, etc.), or other acceptable means of determining the best investment of effort. This should comprise at least 50% of total food purchases.

**Processed Chlorine Free.** Recycled or recovered-content in which chlorine or chlorinecontaining compounds are not used in any of the processing streams during the manufacturing and converting of the products.

**Rapidly Renewable.** Material from plants that are typically harvested within a 10-year or shorter cycle.

**Raised Without Antibiotics.** The use of non-therapeutic antibiotics and the feeding of antibiotics were not practiced in raising the animals, with documented evidence.

**Recovered Material.** Material that has been recovered or diverted from waste generated by a manufacturing process. Recovered material may include post-consumer material, cuttings, trimmings, obsolete inventories, and rejected unused stock, but does not include material capable of being re-used within the process that generated it.

Red Meat. The flesh from ruminant mammals, namely cattle.

**Remanufactured.** Products that have been completely disassembled; parts inspected, cleaned, repaired or replaced; then reassembled and refinished to "like-new" conditions.

**Renewable Energy.** Energy from non-depleting sources and derived from natural processes that are replenished indefinitely, including wind, solar, water, geothermal, and biofuels.

**Renewable Energy Certificates.** Units of renewable energy that are purchased from a thirdparty certification program (see Appendix B for examples) and are not sold more than once or claimed by more than one party.

**Seasonal**. Food that is produced within the normal growing cycle of the operation's agricultural geographic location (e.g., excludes hot house production) and within 200 miles of the operation.

Self-Serve. Operations that allow the consumers to portion out their food selections.

**Socially-Preferable.** A product certified as such by a third-party certification program that verifies that the product was produced in a manner that protects worker health and safety, worker compensation, and trade capacity of all sizes of farm operations (see Appendix B for examples).

**Solid Waste.** Material that is discarded and not donated or composted, such as packaging, supplies, and equipment.

**Third-Party Certification Program.** A program without any financial interest or stake in the sales of the product or service being certified, or other conflict of interest. There must be a standard to base the certification from and the standard must be appropriate and meaningful for its intended purpose. The standard must be publically available and developed with stakeholder input. Certification to the standard must be completed by an independent party (i.e. not the product company), include site inspections, where applies, and have a monitoring program to verify ongoing compliance. Examples of some programs are included in Appendices A and B.

**Transport Packaging.** Packaging used to carry food from the operation to another location. This includes packages in direct contact with the food such as trays or bowls and packages used to carry such items like totes and bags.

Trim Waste. The inedible portion of a food item removed prior to serving.

Vegan. Food that does not contain any animal-based products.

Vegetarian. Food that does not contain meat.

**Waste**. All discarded material including recyclable material, compostable material, food for donation, and material sent to the landfill.

**Yield Test.** A comparison of anticipated edible portions versus actual edible portions (after trimming of unused/unusable elements). Yield tests are conducted to determine trim waste efficiency levels and compared to published levels in the Chef's Book of Formulas, Yields, and Sizes by Arno Schmidt and published by Wiley.

#### 3.0 ENVIRONMENTAL PERFORMANCE REQUIREMENTS

**Mandatory:** Requirements that must be completed for the corresponding level of achievement outlined in the criterion noted by the reference number (e.g., 3.1.1). Bronze only needs to complete the mandatory requirements (and only at the Bronze level, where so indicated).

**Options:** Silver and Gold certification requires the completion of the mandatory requirements (at the Silver and Gold levels, where so indicated) and the specified number of requirement options. *The innovation category provides credit for other initiatives and leadership methods not specified or covered elsewhere by other requirements.* 

#### **3.1 Responsible Food Purchases.**

| Mandatory    | 3.1.1 Total Food Purchases   |
|--------------|--|
|              | 3.1.2 Animal-Based Food Purchases                                  |
|              | 3.1.3 Responsible Seafood Purchases                                |
|              | 3.1.4 Responsible Coffee Purchases                                 |
| SILVER requi | res meeting at least TWO of the criteria from the options listed.  |
| GOLD require | es meeting at least THREE of the criteria from the options listed. |
| Options      | 3.1.5 Animal-Based Food Purchases or Vegetarian/Vegan Menu         |
|              | 3.1.6 Socially-Preferable Food Purchases                           |
|              | 3.1.7 Efficiently-Distributed Food                                 |
|              | 3.1.8 Seasonal Food  |
|              | 3.1.9 Total Food Purchases   |
|              | 3.1.10 Food Innovation   |

**3.1.1 Total Food Purchases -** *Mandatory.* The portion of total food purchases, based on cost averaged over a minimum of the last 3 months and up to the last 12 months, that is either organic or environmentally-preferable (see Appendix A), or a combination thereof, shall be:

| BRONZE | SILVER | GOLD |
|--------|--------|------|
| 25%    | 50%    | 80%  |

Food that is directly-purchased and not certified by the programs outlined in Appendix A, but is produced in an equivalent means to organic or environmentally-preferable, may qualify for up to half of the required purchases when appropriate documentation/attestation is provided for review.

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**3.1.2 Animal-Based Food Purchases,** *Where Applies - Mandatory.* The percent of the total animal-based food purchases, based on cost averaged over a minimum of the last 3 months and up to the last 12 months, shall be:

| BRONZE   | SILVER  | GOLD  |
|--|---|---|
| • Demonstrated and attested<br>to be 25% raised without<br>antibiotics | <ul> <li>Demonstrated and attested to be 50% raised without antibiotics, and</li> <li>Demonstrate a 15% reduction in red meat, normalized for sales volume<sup>1</sup></li> </ul> | <ul> <li>Demonstrated and attested<br/>to be 80% raised without<br/>antibiotics, and</li> <li>Demonstrate a 25%<br/>reduction in red meat,<br/>normalized for sales<br/>volume<sup>1</sup></li> </ul> |

**3.1.3 Responsible Seafood Purchases,** *Where Applies - Mandatory*. All fish and seafood purchased, over a minimum of the last 3 months and up to the last 12 months, shall be:

| BRONZE                      | SILVER                                      | GOLD                            |
|-----------------------------|---|---------------------------------|
| Not on the Monterey Bay     | On the Monterey Bay Seafood GREEN web list; |                                 |
| Seafood Watch "AVOID"       | Or score GREEN (2.6 or higher)              | ) on the Blue Ocean Institute's |
| web list; Nor score RED     | Guide to Ocean Friendly Seafood.            |                                 |
| (1.39  or less) on the Blue |   |                                 |
| Ocean Institute's Guide to  |   |                                 |
| Ocean Friendly Seafood.     |   |                                 |

Environmentally-preferable food, such as that certified by MSC, and food that adheres to the farmed shrimp and farmed salmon purchasing policies designed by Environmental Defense Fund is permitted.

**3.1.4 Responsible Coffee Purchases -** *Mandatory***.** The amount of coffee purchased, based on cost averaged over a minimum of the last 3 months and up to the last 12 months, either organic, environmentally-preferable (see Appendix A), or socially-preferable (see Appendix B) shall be:

| BRONZE | SILVER | GOLD |
|--------|--------|------|
| 50%    | 100%   |      |

Directly-purchased coffee that is not certified by the programs outlined in Appendix A and B but produced in an equivalent means to organic, environmentally-preferable, or socially-preferable may qualify for up to half of the required purchases when appropriate documentation/attestation is provided for review.

<sup>&</sup>lt;sup>1</sup> For operations that serve red meat and compared to a baseline that was no less than one year ago and no greater than three years ago.

**3.1.5 Animal-Based Food Purchases or Vegetarian/Vegan Menu**, *Option*. The percentage of total animal-based food purchases, based on cost averaged over a minimum of the last 3 months and up to the last 12 months, that is either humanely-raised (see Appendix B), organic, environmentally-preferable (see Appendix A), or a combination thereof shall be:

| BRONZE         | SILVER                      | GOLD                        |
|----------------|-----------------------------|-----------------------------|
| No requirement | 50% of total animal-based   | 80% of total animal-based   |
|                | food purchases; Or the menu | food purchases; Or the menu |
|                | shall not include red meat  | shall be vegetarian or      |
|                | products <sup>2</sup> .     | vegan <sup>2</sup> .        |

**3.1.6 Socially-Preferable Food Purchases -** *Option.* The percentage of total food purchases, based on cost averaged over a minimum of the last 3 months and up to the last 12 months, that is either socially-preferable (see Appendix B), or directly-purchased and not certified but attested to be equivalent:

| BRONZE         | SILVER | GOLD |
|----------------|--------|------|
| No requirement | 25%    | 50%  |

**3.1.7 Efficiently-Distributed Food -** *Option***.** The operation shall document the distance, in miles, and mode of transportation from the site of production to the operation for priority food purchases, to the extent possible, and:

| BRONZE         | SILVER                       | GOLD: Meet the silver           |
|----------------|------------------------------|---------------------------------|
|                |                              | requirements plus:              |
| No requirement | None of the priority food    | At least 50% of the total food  |
|                | shall be transported by air, | is transported to the operation |
|                | where feasible.              | in alternatively-fueled         |
|                |                              | vehicles, fuel-efficient        |
|                |                              | vehicles, or by EPA             |
|                |                              | SmartWay Partners.              |

**3.1.8 Seasonal Food -** *Option***.** The percent of total food purchases, based on cost averaged over the last 3 months and up to the last 12 months, that is seasonal food shall be:

| BRONZE         | SILVER | GOLD |
|----------------|--------|------|
| No requirement | 25%    | 50%  |

<sup>&</sup>lt;sup>2</sup> Where a comparable operation typically includes meat or animal-based food.

**3.1.9 Total Food Purchases -** *Option.* The portion of total food purchases, based on cost averaged over a minimum of the last 3 months and up to the last 12 months, that is either organic or environmentally-preferable (see Appendix A), or a combination thereof, shall be:

| BRONZE         | SILVER | GOLD |
|----------------|--------|------|
| No requirement | 80%    | 95%  |

Food that is directly-purchased and not certified by the programs outlined in Appendix A, but is produced in an equivalent means to organic or environmentally-preferable may qualify for up to half of the required purchases when appropriate documentation/attestation is provided for review.

#### **3.1.10** Food Innovation – *Option*.

| BRONZE         | SILVER   | GOLD                   |
|----------------|--|------------------------|
| No requirement | Initiative supporting one of the f<br>responsible food options, 2) redu<br>purchased, 3) support local agric<br>dietary health and wellness. | ace GHG impact of food |

#### **3.2 Energy Conservation and Management.**

| Mandatom       | 3.2.1 Energy Management Plan                                       |
|----------------|--|
| Mandatory      | e. e   |
|                | 3.2.2 Energy Use and Conservation Tracking                         |
|                | 3.2.3 Energy Conservation Performance                              |
|                | 3.2.4 Energy Conservation Maintenance Checklist                    |
|                | 3.2.5 Climate Control  |
|                | 3.3.6 Lighting Controls  |
|                | 3.2.7 Refrigerants   |
| SILVER requi   | res meeting at least TWO of the criteria from the options listed.  |
| GOLD require   | es meeting at least THREE of the criteria from the options listed. |
| <b>Options</b> | 3.2.8 Refrigerators and Freezers                                   |
|                | 3.2.9 Energy-Efficient Appliances                                  |
|                | 3.2.10 Energy-Efficient Lighting                                   |
|                | 3.2.11 Ventilation Hoods   |
|                | 3.2.12 Energy-Efficient Building                                   |
|                | 3.2.13 Renewable Energy  |
|                | 3.2.14 Zero GHG  |
|                | 3.2.15 Energy Conservation Performance                             |
|                | 3.2.16 Energy Innovation   |

#### 3.2.1 Energy Management Plan - Mandatory.

| BRONZE  | SILVER | GOLD |
|---|--------|------|
| The operation shall have a documented energy management plan with goals for energy              |        |      |
| conservation, an action plan to meet the goals, documented monitoring of progress against the   |        |      |
| goals, and an operating plan to support the goals (including start-up and shutdown schedule for |        |      |
| lights, equipment, and other energy-consuming items).   |        |      |

#### **3.2.2 Energy Use and Conservation Tracking - Mandatory.**

| BRONZE  | SILVER: Meet the bronze                                   | GOLD: Meet the bronze   |
|---|---|---|
|   | requirements plus:  | requirements plus:  |
| Monitor energy bills<br>monthly with the ENERGY<br>STAR portfolio manager <sup>3</sup><br>or an equivalent energy<br>management or<br>documentation system<br>(e.g., utility's software or<br>Excel spreadsheet) that:<br>tracks utilization, EUI (e.g.,<br>BTU/sq ft), and costs;<br>benchmarks these factors<br>relative to past performance<br>(normalized for sales<br>volume); and determines<br>percent improvement or<br>energy savings. | Conduct an annual energy au an inventory, evaluation, and | idit that includes, but not limited to,<br>l inspection of energy use and<br>lighting, and building envelope. |

<sup>&</sup>lt;sup>3</sup>Portfolio Manager is a free web application developed by the EPA and offers a way for restaurants to track their weather-normalized energy and water use. Portfolio Manager allows certain commercial buildings (e.g., office buildings, warehouses) to obtain an ENERGY STAR label; restaurants are not eligible for this label, but Portfolio Manager can still be a very useful tool for restaurants to track energy and water use.

**3.2.3 Energy Conservation Performance -** *Mandatory***.** Energy conservation measures shall achieve the following, normalized for sales volume:

| BRONZE                        | SILVER                        | GOLD                            |
|-------------------------------|-------------------------------|---------------------------------|
| A 7% improvement in EUI       | A 10% improvement in EUI      | A 15% improvement in EUI        |
| over baseline (no less than   | over baseline (no less than   | over baseline (no less than one |
| one year ago, no greater than | one year ago, no greater than | year ago, no greater than 3     |
| 3 years ago) or an EUI 15%    | 3 years ago) or an EUI 20%    | years ago) or an EUI 30%        |
| better than the applicable    | better than the applicable    | better than the applicable      |
| national EUI average (refer   | national EUI average (refer   | national EUI average (refer to  |
| to ENERGY STAR's national     | to ENERGY STAR's national     | ENERGY STAR's national          |
| average table).               | average table).               | average table).                 |

Renewable energy directly used on-site, but not including renewable energy certificates, may be considered an energy conservation measure and counted toward the above requirement.

# 3.2.4 Energy Conservation Maintenance Checklist - Mandatory.

| <ul> <li>The operation shall have a maintenance checklist and records of inspections for equipment, and other energy-consuming items that includes at least the followine.</li> <li>The operation shall perform and document manufacturer recommended appliances to ensure all equipment is functioning properly and maintain</li> </ul> | ng:<br>maintenance to |  |
|--|-----------------------|--|
| • The operation shall perform and document manufacturer recommended appliances to ensure all equipment is functioning properly and maintain  | maintenance to        |  |
| appliances to ensure all equipment is functioning properly and maintain  |                       |  |
|  | ning energy           |  |
|  | 0 0.                  |  |
| efficiency levels, including an air balance for the kitchen exhaust system   |                       |  |
| • Clean lighting fixtures, diffusers, and lamps monthly. Unused ballasts in  | n delamped            |  |
| fixtures shall be disconnected.  |                       |  |
| Cracked or worn refrigerator and freezer door gaskets and strip curtains   | s that allow air      |  |
| transmission shall be replaced and doors shall be aligned.   |                       |  |
| • Clean permanent filters with mild detergents and change replaceable filters according to manufacturer guidelines.  |                       |  |
| • Check HVAC system each year for coolant and air leaks, clogs, and obstructions of air intake and vents.  |                       |  |
| • Keep HVAC condenser coils free of dust and lint and evaporator coils f frost.  | ree of excess         |  |
| • Hot water heaters set in accordance with the minimum or recommended  | d supply              |  |
| temperature for the facility's dish machines. In the absence of a dish machine, water  |                       |  |
| temperature shall be set in accordance with minimum health code requirements.  |                       |  |
| Monitor refrigerator and freezer temperatures.   |                       |  |

# 3.2.5 Climate Control - Mandatory.

| BRONZE   | SILVER | GOLD |
|--|--------|------|
| A programmable thermostat shall be used and set back at night and at other non-operating |        |      |
| hours to cool at 85°F and heat at 62°F.  |        |      |

# 3.2.6 Lighting Controls - Mandatory.

| BRONZE                         | SILVER                        | GOLD: Meet the bronze            |
|--------------------------------|-------------------------------|----------------------------------|
|                                |                               | requirements plus:               |
| Whenever possible, lighting co | ontrols shall be used such as | Where applies, daylight          |
| vacancy sensors, bypass/delay  | timers, or time clocks in low | dimming systems or manual        |
| occupancy areas such as walk-  | ins, closets, office, and     | dimmable ballasts shall be       |
| restrooms.                     |                               | used so that the lights turn off |
|                                |                               | automatically when daylight      |
|                                |                               | is sufficient including areas    |
|                                |                               | where daylight is available in   |
|                                |                               | regularly occupied spaces        |
|                                |                               | within 15 feet of windows or     |
|                                |                               | skylights.                       |

## 3.2.7 Refrigerants - Mandatory.

| BRONZE          | SILVER  | GOLD |
|-----------------|---|------|
| No requirement. | All new and replacement equipment shall not use CFC-based |      |
|                 | refrigerants.   |      |

## 3.2.8 Refrigerators and Freezers - Option.

| BRONZE         | SILVER  | GOLD: Meet the silver requirements plus:   |
|----------------|---|--|
| No requirement | <ul> <li>Walk-in refrigerator and<br/>freezer doors shall have<br/>plastic strip curtains.</li> <li>Refrigeration cold suction<br/>lines and hot water storage<br/>tanks shall be insulated with<br/>minimum of R-13 unless<br/>insulation does not fit in<br/>space provided.</li> </ul> | <ul> <li>Walk-in refrigerator and<br/>freezer doors shall have<br/>either open-door buzzers or<br/>automatic door closers.</li> <li>An automated temperature<br/>monitoring system for<br/>refrigerators and freezers<br/>that is frequently monitored.</li> </ul> |

| 3.2.9 Energy-Efficient Appliances - Option. The operation shall have: |   |  |
|---|---|--|
| BRONZE  | SILVER  | GOLD   |
| No requirement  | 20% of its energy-efficient<br>qualified kitchen appliance<br>options (see Appendix C) as<br>energy-efficient, including at<br>least two used on most days<br>of business; such as one<br>energy-efficient appliance<br>used during regular<br>operation. | • 50% of its energy-efficient<br>qualified kitchen appliance<br>options (see Appendix C)<br>as energy-efficient,<br>including at least four used<br>on most days of business;<br>such as two energy-<br>efficient appliances used<br>during regular operation. |

# 3.2.9 Energy-

| used during regular<br>operation. | <ul> <li>such as two energy-<br/>efficient appliances used<br/>during regular operation,<br/>and</li> <li>Turn pilot light on only<br/>during equipment use.</li> </ul> |
|-----------------------------------|---|
|                                   |   |

# 3.2.10 Energy-Efficient Lighting - Option. The operation shall have:

| BRONZE         | SILVER   | GOLD  |  |
|----------------|--|---|--|
| No requirement | seating area, restrooms, staff of<br>fixtures (e.g., display or accent<br>this requirement if compatible | hours (e.g., exit signs, kitchen,<br>fices, etc.). Specialty light<br>lighting) may be exempt from<br>options are not available. T-12 |  |
|                | fluorescent lighting shall not be used.  |   |  |

# 3.2.11 Ventilation Hoods - Option. Kitchen ventilation hoods shall be:

| BRONZE         | SILVER   | GOLD: Meet the silver requirements plus: |
|----------------|--|--|
| No requirement | Efficiently designed, such as<br>switches for different<br>stations, variable-speed<br>controls, front lip, and side-<br>panels. | Demand control.                          |

# **3.2.12** Energy-Efficient Building – Option.

| BRONZE         | SILVER   | GOLD |  |
|----------------|--|------|--|
| No requirement | The direct business function is in an environmentally-preferable |      |  |
|                | building or an ENERGY STAR qualified building.                   |      |  |

## 3.2.13 Renewable Energy - Option.

| BRONZE         | SILVER  | GOLD                           |  |
|----------------|---|--------------------------------|--|
| No requirement | The operation uses renewable energy, not including any        |                                |  |
|                | renewable energy certificates, for at least 20% of its direct |                                |  |
|                | energy needs; alternatively, the operation is a member of the |                                |  |
|                | Center for Resource Solutions' Green-e Marketplace and using  |                                |  |
|                | renewable energy, not including                               | renewable energy certificates. |  |

# 3.2.14 Zero GHG - Option.

| BRONZE         | SILVER  | GOLD  |
|----------------|---|---|
| No requirement | direct business energy us<br>partnerships and/or throu<br>CarbonFund Carbon-Fre<br>has an active program to | zero greenhouse gas emissions for its<br>se and vehicle fuel use, with proven<br>igh carbon offsets (e.g., Certified<br>e Partner). In addition, the operation<br>reduce its carbon footprint through<br>at least 5% annually), not including |

**3.2.15 Energy Conservation Performance -** *Option***.** Energy conservation measures shall achieve the following, normalized for sales volume:

| BRONZE         | SILVER   | GOLD                            |
|----------------|--|---------------------------------|
| No requirement | A 15% improvement in EUI                         | A 20% improvement in EUI        |
|                | over baseline (no less than                      | over baseline (no less than one |
|                | one year ago, no greater than                    | year ago, no greater than 3     |
|                | 3 years ago) or an EUI 30%                       | years ago) or an EUI 40%        |
|                | better than the appropriate                      | better than the appropriate     |
|                | national EUI average (refer                      | national EUI average (refer to  |
|                | to ENERGY STAR's national ENERGY STAR's national |                                 |
|                | average table).                                  | average table).                 |

Renewable energy directly used on-site, but not including renewable energy certificates, may be

considered an energy conservation measure and counted toward the above requirement.

# 3.2.16 Energy Innovation - Option.

| BRONZE         | SILVER  | GOLD                     |
|----------------|---|--------------------------|
| No requirement | Initiative supporting one of the f                        | following objectives: 1) |
|                | conserve energy, 2) source renewable energy, or 3) reduce |                          |
|                | GHG impact.   |                          |

# 3.3 Water Conservation and Management.

| Mandatory      | 3.3.1 Water Management Plan  |
|----------------|--|
|                | 3.3.2 Water Use Tracking   |
|                | 3.3.3 Water Conservation Checklist                                 |
|                | 3.3.4 Water-Efficiency   |
| SILVER requi   | res meeting at least TWO of the criteria from the options listed.  |
| GOLD require   | es meeting at least THREE of the criteria from the options listed. |
| <b>Options</b> | 3.3.5 Restroom Water Efficiency                                    |
|                | 3.3.6 Kitchen Water Efficiency                                     |
|                | 3.3.7 Water Controls   |
|                | 3.3.8 Water Conservation Performance                               |
|                | 3.3.9 Water Recycling  |
|                | 3.3.10 Water Innovation  |

# 3.3.1 Water Management Plan - Mandatory.

| BRONZE  | SILVER | GOLD |  |
|---|--------|------|--|
| The operation shall have a water management plan with goals and an action plan for water    |        |      |  |
| conservation to meet the goals, documented monitoring of progress against the goals, and an |        |      |  |
| operating plan to support the goals.  |        |      |  |

#### 3.3.2 Water Use Tracking - Mandatory.

| BRONZE  | SILVER | GOLD |  |
|---|--------|------|--|
| The operation shall monitor water bills monthly with the ENERGY STAR portfolio manager <sup>4</sup> |        |      |  |
| or an equivalent utility management or documentation system (e.g., utility's software or Excel      |        |      |  |
| spreadsheet) that tracks utilization and costs, benchmarks these factors relative to past           |        |      |  |
| performance (normalized to sales volume), and determines percent improvement or savings.            |        |      |  |

#### 3.3.3 Water Conservation Checklist - Mandatory.

| BRONZE                                      | SILVER  | GOLD   |
|---|---|--|
| The operation shall have a v                | vater conservation checl                              | clist and records of inspections that include              |
| at least the following:                     |   |  |
| • Turn off faucets not                      | in use.   |  |
| • Regularly check for                       | and repair all leaks.                                 |  |
| • Maintain toilets and                      | urinals.  |  |
| 1   | ations, serve customers                               | drinking water and refill drinking water                   |
| only upon request.                          |   |  |
| • Do not use running                        | water to melt ice in sink                             | S.   |
| Hand-scrape dishes                          | before loading into dish                              | washer.  |
| • Use 1.6 gpm or less                       | pre-rinse spray valve.                                |  |
| Operate dishwashers                         | s when full, whenever po                              | ossible.   |
| • Use dry floor and ou spraying or hosing w | -   | , followed by damp mopping, rather than                    |
| 1   | ture shall be set to the lo istent with the type of s | owest temperature allowed by health anitizing system used. |

**3.3.4 Water-Efficiency -** *Mandatory***.** The operation shall have water fixtures that meet the specifications outlined below. Any existing toilets and urinals that exceed the required pressure or flow rates shall be on a schedule for replacement within two years. An exception is permitted if the plumbing infrastructure will not adequately function with lower flow rates.

| BRONZE                                | SILVER     | GOLD: |  |
|---------------------------------------|------------|-------|--|
| • 2.2 gpm or less for kitch           | hen faucet |       |  |
| • 0.5 gpm or less for lavatory faucet |            |       |  |
| • 1.6 gpf or less for toilet          | S          |       |  |

<sup>4</sup>Portfolio Manager is a free web application developed by the EPA and offers a way for restaurants to track their weather-normalized energy and water use. Portfolio Manager allows certain commercial buildings (e.g., office buildings, warehouses) to obtain an ENERGY STAR label; restaurants are not eligible for this label, but Portfolio Manager can still be a very useful tool for restaurants to track energy and water use.

• 1.0 gallon or less or waterless for urinals

**3.3.5 Restroom Water-Efficiency -** *Option***.** The operation shall have water fixtures that meet the specifications:

| BRONZE          | SILVER  | GOLD |
|-----------------|---|------|
| No requirement. | Dual flush toilets (e.g., 1.6/0.8 gpf) or other fixture with 1.28 |      |
|                 | gpf or better.  |      |

**3.3.6 Kitchen Water-Efficiency -** *Option***.** The operation shall have water fixtures and appliances that meet the specifications:

| BRONZE          | SILVER  | GOLD |
|-----------------|---|------|
| No requirement. | • 1.28 gpm or less for spray valve                        |      |
|                 | • 1.5 gpm or less for kitchen faucet                      |      |
|                 | • ENERGY STAR dishwasher and ice maker, or equivalent, if |      |
|                 | available (Note: ENERGY STAR does not currently address   |      |
|                 | conveyor machines).                                       |      |

#### 3.3.7 Water Controls - Option.

| BRONZE          | SILVER   | GOLD |
|-----------------|--|------|
| No requirement. | The operation shall have hands-free taps (electronic or foot   |      |
|                 | peddle operated) or sensors for all hand and kitchen sinks, an |      |
|                 | exception is permitted for spray valve-operated faucets.       |      |

#### 3.3.8 Water Conservation Performance - Option. Water conservation measures shall achieve:

| BRONZE         | SILVER                          | GOLD                        |
|----------------|---------------------------------|-----------------------------|
| No requirement | A 10% improvement from          | A 20% improvement from      |
|                | baseline (no less than one year | baseline (no less than one  |
|                | ago, no greater than 3 years    | year ago, no greater than 3 |
|                | ago), as described in 3.3.2.    | years ago), as described in |
|                |                                 | 3.3.2.                      |

# 3.3.9 Water Recycling - Option.

| BRONZE         | SILVER  | GOLD: Meet the silver  |
|----------------|---|--|
|                |   | requirements plus:   |
| No requirement | Rainwater is collected on-site<br>and used for allowed non-<br>potable water needs. | Facility water is recycled on-<br>site and used for allowed non-<br>potable water needs. |

# 3.3.10 Water Innovation - Option.

| BRONZE         | SILVER  | GOLD |
|----------------|---|------|
| No requirement | Initiative supporting one of the following objectives: 1) |      |
|                | conserve water, or 2) reduce water footprint.             |      |

# 3.4 Waste Reduction and Management.

| Mars Jatores | 2.4.1 Weste Deduction and Management Dlan                          |
|--------------|--|
| Mandatory    | 3.4.1 Waste Reduction and Management Plan                          |
|              | 3.4.2 Total Waste Audit  |
|              | 3.4.3 Total Waste Reduction  |
|              | 3.4.4 Total Waste Diversion  |
|              | 3.4.5 Food Donations   |
|              | 3.4.6 Fat, Oil, and Grease Recycling                               |
|              | 3.4.7 Composting   |
|              | 3.4.8 Solid Waste Recycling  |
|              | 3.4.9 Disposable Products  |
|              | 3.4.10 Packaged Water  |
| SILVER requi | res meeting at least TWO of the criteria from the options listed.  |
| GOLD require | es meeting at least THREE of the criteria from the options listed. |
| Options      | 3.4.11 Food Merchandising  |
| _            | 3.4.12 Disposable Food Service Products                            |
|              | 3.4.13 On-Site Waste Conversion                                    |
|              | 3.4.14 On-Site Waste Processing                                    |
|              | 3.4.15 Ongoing Pre-Consumer Waste Monitoring                       |
|              | 3.4.16 Reusable Service Ware                                       |
|              | 3.4.17 Hand Drying   |
|              | 3.4.18 Reusable Take-Out Containers                                |
|              | 3.4.19 Waste Performance   |
|              | 3.4.20 Waste Innovation  |

#### 3.4.1 Waste Reduction and Management Plan - Mandatory.

| BRONZE  | SILVER | GOLD |
|---|--------|------|
| The operation shall have a documented waste management plan with goals for waste              |        |      |
| reduction, an action plan to meet the goals, documented monitoring of progress against the    |        |      |
| goals, and an operating plan to support the goals (including forecasting, production records, |        |      |
| yield testing, inventory management, alternate uses of food inventory, and reusable service   |        |      |
| ware).  |        |      |

**3.4.2 Total Waste Audit -** *Mandatory***.** The operation shall track total waste, including both preconsumer waste and post-consumer waste, normalized to sales volume. The operation shall maintain records on amount (e.g., pounds) and type (e.g., food, recyclable material, solid waste, etc.) over a period of at least three days of normal operations; tracking shall be conducted at the following frequency:

| BRONZE                      | SILVER                      | GOLD                               |
|-----------------------------|-----------------------------|------------------------------------|
| Pre-consumer at least       | Pre-consumer waste at least | monthly and post-consumer at least |
| quarterly and post-         | quarterly.                  |                                    |
| consumer at least annually. |                             |                                    |

Post-consumer waste not in facility does not need to be counted, such as when the consumer takes the food out of the facility to eat it or for drop-off catering services.

#### 3.4.3 Total Waste Reduction - Mandatory.

| BRONZE                        | SILVER: Meet the bronze                                       | GOLD: Meet the bronze |
|-------------------------------|---|-----------------------|
|                               | requirement plus:   | requirement plus:     |
| The waste plan in 3.4.1 shall | The operations shall demonstrate total waste reduction,       |                       |
| include priority for waste    | normalized for sales volume, by comparing the most recent     |                       |
| reduction, above other goals. | audit from 3.4.2 to the baseline. The baseline shall be the   |                       |
|                               | beginning amount of waste after the first audit or, if audits |                       |
|                               | have been conducted for more than one year, the waste level   |                       |
|                               | no greater than 3 years ago.                                  |                       |

**3.4.4 Total Waste Diversion -** *Mandatory***.** The operation shall divert the following percent of total operational waste (excluding construction or renovation material) from the landfill based on the most recent waste audit conducted during normal operations according to 3.4.2:

| BRONZE | SILVER | GOLD |
|--------|--------|------|
| 40%    | 70%    | 90%  |

#### 3.4.5 Food Donations - Mandatory.

| BRONZE  | SILVER   | GOLD |  |
|---|--|------|--|
| The operation shall research an   | The operation shall research and document local food donation options. Where available, food |      |  |
| donations shall be done on a regular basis, and recorded. Operations shall have a documented  |  |      |  |
| policy of what food can be safely donated, to which facilities, and how. Priority shall be to |  |      |  |
| donations for human consumption (not including employee meals), followed by animal feed.      |  |      |  |
| Food that can be donated should not be composted or sent to the landfill.                     |  |      |  |

# 3.4.6 Fat, Oils, and Grease Recycling - Mandatory.

| BRONZE  | SILVER | GOLD |
|---|--------|------|
| The operation shall research and document local fat, oil, and grease recycling options. Where   |        |      |
| available, used frying oil and oil from grease recovery devices shall be recycled with proven   |        |      |
| partnerships for using the oil for biodiesel production or other means of replacing fossil fuel |        |      |
| use.  |        |      |

**3.4.7 Composting -** *Mandatory***.** The operation shall research and document local composting options (including farms). Where composting is available, the operation shall have clearly marked sorting mechanisms (e.g., bins) in areas waste is collected and:

| BRONZE                   | SILVER   | GOLD |
|--------------------------|--|------|
| Compost all pre-consumer | Compost all pre-consumer food waste, post-consumer food      |      |
| food waste.              | waste, and other compostable material, such as service ware. |      |

#### 3.4.8 Solid Waste Recycling - Mandatory.

| BRONZE  | SILVER | GOLD |
|---|--------|------|
| The operation shall research and document local solid waste recycling options. The operation      |        |      |
| shall maintain a recycling program for materials for which recycling is locally available and     |        |      |
| have clearly marked sorting mechanisms (e.g., bins) in areas waste is collected. Materials may    |        |      |
| include, but are not limited to, aluminum, plastic (1-5), steel, glass, cardboard, newspaper,     |        |      |
| mixed paper, electronics, inkjet and toner cartridges, paint, batteries, and fluorescent lighting |        |      |
| like CFLs.  |        |      |

**3.4.9 Disposable Products -** *Mandatory*. The operation shall eliminate non-essential disposable products and the following:

| BRONZE                         | SILVER  | GOLD                             |  |
|--------------------------------|---|----------------------------------|--|
| Polystyrene packaging and      | l cups shall not be used.   |                                  |  |
| • When cost-effective altern   | atives are available, Society of t  | he Plastics Industry resin code  |  |
| #6 products (e.g., utensils)   | shall not be used.  |                                  |  |
| • Except for trash can liners, | , plastic bags shall not be used.   |                                  |  |
| • Disposable paper and tissu   | e products shall be environment   | ally-preferable (see Appendix    |  |
| A); 100% recovered contex      | A); 100% recovered content, the minimum amount of post-consumer content outlined in |                                  |  |
| the EPA Comprehensive Pa       | the EPA Comprehensive Procurement Guidelines, and processed chlorine free; Or 100%  |                                  |  |
| agricultural residue fiber.    |   |                                  |  |
| 1                              | Ill not use disposable or single-u  | se utensils or serving ware: an  |  |
| exception is permitted for     | exception is permitted for take-out food.   |                                  |  |
|                                | Portion-controlled condiments and disposable napkins, utensils, and straws shall be |                                  |  |
| provided upon customer re      | provided upon customer request or with single-serve dispensers, where applies.      |                                  |  |
| Operations shall not procur    | Operations shall not procure waxed cardboard packaging for use in operations.       |                                  |  |
| Operations shall use reusal    | ble transport packaging instead of  | of one-time (or limited-use): an |  |

• Operations shall use reusable transport packaging instead of one-time (or limited-use): an exception is permitted for packages directly containing food for delivery or drop-off service.

#### 3.4.10 Packaged Water - Mandatory.

| BRONZE   | SILVER: Meet the bronze requirements plus:  | GOLD: Meet the silver requirements plus:   |
|--|---|--|
| The operation shall have tap<br>water available for<br>customers, as an alternative<br>to bottled water. | No bottled water shall be<br>sold, unless it was packaged<br>on-site or locally packaged. | The operation shall have<br>purified water available for<br>customers and employees. |

#### 3.4.11 Food Merchandising, Where Applies - Option.

| BRONZE          | SILVER: Meet the bronze requirements plus:  | GOLD: Meet the silver requirements plus:  |
|-----------------|---|---|
| No requirement. | <ul> <li>All-you-care-to-eat<br/>operations shall implement<br/>merchandising change<br/>procedures to minimize<br/>food volumes leading up to<br/>closing/transition periods<br/>without reducing selection<br/>or quality of presentation.</li> </ul> | <ul> <li>All-you-care-to-eat<br/>operations shall not provide<br/>trays to customers.</li> <li>Full-service operations shall<br/>offer half-portion options<br/>for entrees on the menu.</li> </ul> |

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| • Full-service operations<br>shall not serve non-<br>alcoholic beverages in cans<br>or bottles, unless it was |  |
|---|--|
| packaged on-site or locally.  |  |

**3.4.12 Disposable Food Service Products -** *Option***.** Containers, utensils, cups, plates, straws, and other disposable food service items shall be:

| BRONZE         | SILVER   | GOLD   |
|----------------|--|--|
| No requirement | Environmentally-preferable (se<br>certified compostable by a third<br>(see Appendix B); OR contain<br>recovered and post-consumer c<br>chlorine free. <sup>5</sup> | l-party certification program<br>the maximum amount of |

# 3.4.13 On-Site Waste Conversion - Option.

| BRONZE         | SILVER  | GOLD |
|----------------|---|------|
| No requirement | The operation uses an on-site composter or digester for all |      |
|                | organic waste.  |      |

#### 3.4.14 On-Site Waste Processing - Option.

| BRONZE         | SILVER   | GOLD |
|----------------|--|------|
| No requirement | The operation reduces waste volume and weight through        |      |
|                | processing with pulping or other available methods, when the |      |
|                | municipality can manage such processing.                     |      |

# 3.4.15 Ongoing Pre-Consumer Waste Monitoring - Option.

| BRONZE         | SILVER   | GOLD |
|----------------|--|------|
| No requirement | Pre-consumer waste is monitore<br>daily) and the operation demons<br>operational change. |      |

<sup>&</sup>lt;sup>5</sup> Certified compostable products should be used when such products can be composted.

# 3.4.16 Reusable Service Ware, Where Applies - Option.

| BRONZE | SILVER   | GOLD |
|--------|--|------|
| -      | Limited service operations shall provide reusable service ware |      |
|        | for dine-in customers, including plates, bowls, cups, and      |      |
|        | utensils.  |      |

## 3.4.17 Hand Drying - Option.

| BRONZE         | SILVER  | GOLD |
|----------------|---|------|
| No requirement | The operation shall have automatic towel dispensers proven to |      |
|                | reduce towel waste; paper-free hand dryers; Or durable,       |      |
|                | reusable towels at all hand sink locations.                   |      |

# 3.4.18 Reusable Take-Out Container, Where Applies - Option.

| BRONZE         | SILVER  | GOLD |
|----------------|---|------|
| No requirement | The operation has a take-back program or a reusable container |      |
|                | program for take-out packaging.                               |      |

## 3.4.19 Waste Performance - Option.

| BRONZE         | SILVER                            | GOLD                           |
|----------------|-----------------------------------|--------------------------------|
| No requirement | The operation shall divert 90%    | The operation shall divert     |
|                | of its waste from the landfill as | 98% of its waste from the      |
|                | described in 3.4.4 or             | landfill as described in 3.4.4 |
|                | demonstrate a 20% reduction       | or demonstrate a 30%           |
|                | in waste as described in 3.4.3.   | reduction in waste as          |
|                |                                   | described in 3.4.3.            |

#### **3.4.20** Waste Innovation - *Option*.

| BRONZE         | SILVER   | GOLD |
|----------------|--|------|
| No requirement | Initiative supporting one of the following objectives: 1) reduce |      |
|                | discarded material, 2) reuse waste, or 3) recycle resources.     |      |

#### 3.5 Air Quality.

#### 3.5.1 Smoking - *Mandatory*.

| BRONZE  | SILVER | GOLD |
|---|--------|------|
| The operation shall not allow smoking at its facilities or within 25 feet of its entries, outdoor air |        |      |
| intakes, or operable windows where regulations allow or where applies.                                |        |      |

#### 3.5.2 Charbroilers, Where Applies - Mandatory.

| BRONZE          | SILVER   | GOLD |
|-----------------|--|------|
| No requirement. | Chain-driven charbroilers shall have a catalytic oxidizer or |      |
|                 | equivalent emission control device and under-fired           |      |
|                 | charbroilers shall have an emissions control device.         |      |

#### 3.6 Cleaning and Landscape Management

#### 3.6.1 Cleaning - Mandatory. For non-food contact surfaces, the operation shall:

| BRONZE  | SILVER  | GOLD |  |
|---|---|------|--|
| • Use cleaning concentrates and dilution control systems to minimize chemical use, when |   |      |  |
| possible.   |   |      |  |
| • Use durable, reusable cloths  | s and mops.   |      |  |
| • Use environmentally must  | Liss any insumption of the stand of the stand water for slave stands of the standard to its |      |  |

- Use environmentally-preferable cleaning products for glass cleaners, floor cleaners, toilet and restroom cleaners, and general purpose cleaners.
- Use environmentally-preferable hand cleaners that are not antibacterial in customer restrooms, when they are separate from employee restrooms.

# **3.6.2** Cleaning Tools – *Mandatory*.

| BRONZE   | SILVER | GOLD |
|--|--------|------|
| The operation shall use separate cleaning tools (cloths, mops, etc.) for restrooms and the rest of |        |      |
| facility.  |        |      |

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## 3.6.3 Trash Can Liners – Mandatory.

| BRONZE         | SILVER   | GOLD |
|----------------|--|------|
| No requirement | The operation shall use trash can liners with 10% post-      |      |
|                | consumer material or when used for compost collection,       |      |
|                | certified compostable by a third-party certification program |      |
|                | (see Appendix B).  |      |

#### **3.6.4 IPM**, *Where Applies – Mandatory*.

| BRONZE         | SILVER  | GOLD |
|----------------|---|------|
| No requirement | Operations shall use organic insecticides, fertilizers, and |      |
|                | biocides and/or IPM for indoor environment and landscape.   |      |

# **3.6.5 Landscaping**, *Where Applies – Mandatory*.

| BRONZE         | SILVER  | GOLD                               |
|----------------|---|------------------------------------|
| No requirement | The operation shall use plants and trees tolerant of the local    |                                    |
|                | climate, soils and natural water availability. Landscape shall be |                                    |
|                | watered where necessary in the early morning or in evening to     |                                    |
|                | minimize evaporation and plant beds mulched to retain water.      |                                    |
|                | The use of grasses that require in                                | rigation shall be limited to areas |
|                | where direct business activities t                                | ake place.                         |

# 3.7 Environmentally and Socially-Sensitive Purchasing.

### **3.7.1 Environmentally and Socially Sensitive Purchasing Policy** – *Mandatory*.

| BRONZE   | SILVER  | GOLD                                   |  |
|--|---|--|--|
| The operation shall impl   | ement a documented envir  | vironmentally and socially sensitive   |  |
| purchasing policy, which   | n shall include the following   | ing:                                   |  |
| • Consider the life-cyc  | le costs of buying product  | cts and services. Information from all |  |
| available sources sha  | available sources shall be used.  |  |  |
| Incorporation of env   | • Incorporation of environmental and social preferences into purchasing actions and |  |  |
| discussions with sup   | pliers and vendors on such  | ch preferences (see 3.7.1.1).          |  |
| • The trial of potential environmentally and socially responsible products and services. |   |  |  |
| • When available, environmentally-preferable products should be used.                    |   |  |  |
| • Annual evaluation and modification, if necessary, of the environmentally and socially  |   |  |  |

responsible purchasing policy to help ensure maximum benefit (including checking most recent fish/seafood lists and availability of responsible food options).

#### **3.7.1.1 Vendor Preference** – *Mandatory*.

| BRONZE   | SILVER                          | GOLD                             |
|--|---------------------------------|----------------------------------|
| The operation shall document a   | and show evidence of practicing | a vendor policy that includes at |
| least the following preference given to vendors that:                        |                                 |                                  |
| • Provide environmentally-preferable products (e.g., certified products).    |                                 |                                  |
| • Use efficient transportation.  |                                 |                                  |
| • Do not require paper for ordering.   |                                 |                                  |
| • Provide items in bulk.   |                                 |                                  |
| • Take-back and reuse delivery containers, approved for commercial food use. |                                 |                                  |
|  |                                 |                                  |

# **3.7.2** Products for Food Preparation, *Where Applies – Mandatory*.

| BRONZE         | SILVER  | GOLD |
|----------------|---|------|
| No requirement | • Ethanol-based gel or wick chafing fuels shall be used.    |      |
|                | • Coffee filters shall be reusable or be processed chlorine |      |
|                | free or not be bleached.                                    |      |

#### 3.7.3 Sanitary Paper Products – Mandatory.

| BRONZE   | SILVER | GOLD |
|--|--------|------|
| Sanitary paper products (such as restroom towels, napkins, bathroom tissue, and facial tissue) |        |      |
| shall be environmentally-preferable (see Appendix A) or contain 100% recovered content,        |        |      |
| processed chlorine free, and the minimum amount of post-consumer content outlined in the       |        |      |
| EPA Comprehensive Procurement Guidelines.  |        |      |

# 3.7.4 Printing and Writing Paper – Mandatory.

| BRONZE  | SILVER | GOLD |
|---|--------|------|
| Paper menus shall be printed on and office paper shall be environmentally preferable (see |        |      |
| Appendix A); Or contain 100% post-consumer material and processed chlorine free; Or made  |        |      |
| from 100% agricultural residue fiber.   |        |      |

**3.7.4.1 Printing** – *Mandatory*. Paper or printed material not covered in 3.7.4 such as printed marketing information, shall be minimized and:

| BRONZE  | SILVER                          | GOLD: Meets bronze<br>requirements plus:   |
|---|---------------------------------|--|
| The default setting for copying<br>sided and paper printed on one<br>copies/printouts/notepads, if av | side shall be used for internal | <ul> <li>For external/outsourced printing:</li> <li>Paper meets the requirements in 3.7.4</li> <li>Double-sided printed</li> <li>Use vegetable-based inks</li> <li>Use waterless lithography printing service and alcohol-free printing or evidence that it is not available.</li> </ul> |

# **3.7.5 Office Electronics** – *Mandatory*.

| BRONZE  | SILVER: Meet bronze requirements plus:  | GOLD: Meet bronze<br>requirements plus:   |
|---|---|---|
| <ul> <li>Rechargeable batteries shall<br/>be used for battery-powered<br/>devices including<br/>flashlights, handheld<br/>vacuums, and other battery-<br/>powered equipment.</li> <li>Printers and copiers<br/>replaced or purchased shall<br/>have the ability to print<br/>double-sided.</li> </ul> | <ul> <li>with the IEEE Standard 168<br/>Assessment of Personal Co<br/>equivalent.</li> <li>Office printers, copiers, fax</li> </ul> | e under EPEAT (in compliance<br>80 for the Environmental<br>mputer Products), or<br>a machines, and scanners<br>have evidence that they are |

**3.7.6 Furnishings** – *Mandatory*. Furnishings, such as tables, chairs, and carpet shall be durable products that can be repaired, when possible, and:

| BRONZE                      | SILVER: Meet bronze   | GOLD: Meet bronze  |
|-----------------------------|---|--------------------|
|                             | requirements plus:  | requirements plus: |
| When furniture is purchased | Carpet shall be environmentally-preferable (see Appendix A) |                    |
| it shall not contain added  | or low-emitting.  |                    |
| urea formaldehyde.          |   |                    |

#### **3.7.7** Paint – *Mandatory*.

| BRONZE                           | SILVER                           | GOLD                    |
|----------------------------------|----------------------------------|-------------------------|
| Paint used for architectural sur | faces shall be environmentally-p | referable (Appendix A). |

**3.7.8 Linen and Uniforms**–*Mandatory*. The percent of linens and clothing leased and purchased that shall be organic; environmentally preferable; contain at least 50% post-consumer material; Or contain at least 50% rapidly renewable (non-cotton) material, shall be:

| BRONZE         | SILVER         | GOLD                   |
|----------------|----------------|------------------------|
| No requirement | No requirement | 50% of cumulative cost |

#### 3.7.8.1 Linen and Uniform Cleaning, Where Applies – Mandatory.

| BRONZE                         | SILVER                           | GOLD              |
|--------------------------------|----------------------------------|-------------------|
| Linen and uniform cleaning sha | all be performed without using p | erchloroethylene. |

#### **3.7.9** Transportation

**3.7.9.1 Vehicle Use** – *Mandatory*. Direct business vehicle use shall be in EPA SmartWay certified, fuel-efficient vehicle, hybrid-electric, or alternatively fueled vehicles shall be:

| BRONZE         | SILVER         | GOLD                    |
|----------------|----------------|-------------------------|
| No requirement | No requirement | 30% of cumulative miles |

**3.7.9.2 Fleet Maintenance** – *Mandatory*. The operation's vehicles used for direct business shall have documented evidence for the following:

| BRONZE                        | SILVER  | GOLD |
|-------------------------------|---|------|
| Meet the following            | Meet one other requirement from sections <i>a</i> ), <i>b</i> ), <i>or c</i> ) in the |      |
| requirements from Green       | Green Seal Environmental Standard for Fleet Vehicle                                   |      |
| Seal Environmental Standard   | Maintenance (GC-10).  |      |
| for Fleet Vehicle             |   |      |
| Maintenance (GC-10):          |   |      |
| • Tires are checked routinely |   |      |
| for wear and to maintain      |   |      |

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| proper inflation.              |
|--------------------------------|
| • Engine is checked            |
| routinely for tuning; filters, |
| fluids, exhaust, and other     |
| functioning parts are changed  |
| as required by standard        |
| maintenance schedules.         |
| • Used Parts are recycled,     |
| remanufactured, or reused if   |
| practicable.                   |

# 4.0 TRAINING AND COMMUNICATION REQUIREMENTS

#### 4.1 Company Responsibility.

#### 4.1.1 Company Charter - Mandatory.

| BRONZE  | SILVER                             | GOLD |
|---|------------------------------------|------|
| 1   | pany strategic plan or charter the |      |
| commitment to the environmentally and socially responsible practices included in this |                                    |      |
| standard.   |                                    |      |

#### 4.1.2 Environmental and Social Responsibility Plan - Mandatory.

| BRONZE   | SILVER | GOLD |
|--|--------|------|
| The operation shall have an environmental and social responsibility plan that includes goals |        |      |
| and an action plan related to the criteria of this standard and is updated annually.         |        |      |

# 4.1.2.1 Vendor Code of Conduct - Mandatory.

| BRONZE   | SILVER | GOLD |
|--|--------|------|
| The operation shall have a vendor code of conduct in practice that includes social and |        |      |
| environmental guidelines and vendor preferences outlined in 3.7.1.1.                   |        |      |

## 4.2 Environmental and Social Responsibility Operating Procedures - Mandatory.

| BRONZE                           | SILVER                          | GOLD                             |  |
|----------------------------------|---------------------------------|----------------------------------|--|
| The operation shall have writte  | n operating procedures availabl | e to each employee, including at |  |
| least the following:             |                                 |                                  |  |
| • Environmentally and Social     | lly-Sensitive Purchasing policy |                                  |  |
| • Energy and water managem       | nent and conservation           |                                  |  |
| • Waste management               | Waste management                |                                  |  |
| Cleaning and chemical management |                                 |                                  |  |
| Transportation                   |                                 |                                  |  |
| Administration                   |                                 |                                  |  |
| • Food and worker safety         |                                 |                                  |  |

# 4.3 Environmental and Social Responsibility Training - *Mandatory*.

| BRONZE   | SILVER                             | GOLD                           |
|--|------------------------------------|--------------------------------|
| New employees shall receive a  | minimum of one hour (paid) of      | documented training on the     |
| company's environmental and s  | social responsibility plan (4.1.2) | and operating procedures (4.2) |
| within the first week of employment, as applicable to their duties, and all employees shall  |                                    |                                |
| receive a minimum of two hours (paid) of documented training annually, beyond the initial    |                                    |                                |
| training required, on the company's environmental and social responsibility plan (4.1.2) and |                                    |                                |
| operating procedures (4.2).  |                                    |                                |

#### 4.4 Communication - *Mandatory*.

| BRONZE                          | SILVER                       | GOLD: Meet bronze               |
|---------------------------------|------------------------------|---------------------------------|
|                                 |                              | requirements plus:              |
| The menu shall identify items   | that include the responsible | The operation shall have an     |
| food purchases included in 3.1. |                              | environmental and social        |
|                                 |                              | responsibility report available |
|                                 |                              | to the public, updated          |
|                                 |                              | annually.                       |

# 4.5 Education - *Mandatory*.

| BRONZE  | SILVER | GOLD: Meets bronze             |
|---|--------|--------------------------------|
|   |        | requirements plus:             |
| The operation shall have information accessible (e.g., web    |        | The operation shall extend its |
| site, brochures, etc.) to customers about its environmentally |        | environmentally responsible    |
| and socially responsible practices in order for customers to  |        | practices beyond its direct    |

| learn about the practices that are carried out and the reasons | business to engage the        |
|--|-------------------------------|
| for them.  | community. This shall         |
|  | include the employees, at     |
|  | least once a year, and can be |
|  | done with educational classes |
|  | for children, volunteering    |
|  | within the community, or      |
|  | other similar activities.     |

# **5.0 CONTINUOUS IMPROVEMENT**

#### 5.1 Continuous Improvement Plan – Mandatory.

| BRONZE   | SILVER | GOLD |
|--|--------|------|
| The operation shall demonstrate annual improvement, for normal operating conditions, based |        |      |
| on the action plan included in 4.1.2.  |        |      |

#### 5.2 Required Improvement Timing – Mandatory.

| BRONZE                          | SILVER         | GOLD           |
|---------------------------------|----------------|----------------|
| Operations at the BRONZE        | No requirement | No requirement |
| level shall meet SILVER         |                |                |
| requirements within three       |                |                |
| years of initial certification. |                |                |

#### 6.0 LABELING REQUIREMENTS - Mandatory

| BRONZE   | SILVER                             | GOLD                             |
|--|------------------------------------|----------------------------------|
| Whenever an operation makes  | a claim (e.g., at the operation or | in advertising) that it has been |
| certified to this standard, is shall be based on a third-party certification program with an on-site |                                    |                                  |
| audit and state:   |                                    |                                  |

"[Name of restaurant or food service operation or catering operation] meets the Green Seal<sup>TM</sup>

Standard for Restaurants and Food Services based on its reduced impact on the environment with responsible food offerings, supply purchases, waste handling, and energy and water conservation."

| Product Type | Recognized Certification Program  |
|--------------|-----------------------------------|
| Food         | USDA Organic                      |
|              | Food Alliance                     |
|              | Rainforest Alliance               |
|              | Protected Harvest                 |
|              | Marine Stewardship Council        |
|              | Aquaculture Certification Council |
|              | Bird Friendly                     |
| Supplies     | Green Seal                        |
|              | EcoLogo                           |
| Building     | LEED                              |

# **Appendix A Examples of Environmentally-Preferable Products<sup>6</sup>**

<sup>6</sup> Not necessarily limited to the following.

#### Appendix B Examples of Third-Party Certification Programs (not covered in Appendix A)<sup>7</sup> Product Type Recognized Certification Program

| Product Type    | Recognized Certification Program   |
|-----------------|--|
| Humanely-Raised | Animal Welfare Approved  |
| Food            | American Humane Certified  |
|                 | Certified Humane Raised and Handled  |
|                 | Food Alliance  |
| Socially-       | Food Alliance  |
| Preferable Food | Rainforest Alliance  |
|                 | TransFair USA, other members of the Fairtrade Labeling Organizations International |
| Compostable     | Biodegradable Products Institute   |
| Products        |  |
| Carbon Offsets  | Carbon Fund, Center for Resource Solutions   |
| Renewable       | Center for Resource Solutions  |
| Energy          |  |
| Certificates    |  |

<sup>7</sup> Not necessarily limited to the following.

#### Appendix C Examples of Energy-Efficient Appliances.<sup>8</sup>

**Dishwashing Machine:** A machine designed to clean and sanitize plates, glasses, cups, bowls, utensils, and trays by applying sprays of detergent solution (with or without blasting media granules) and a sanitizing final rinse. Energy and water-efficient dishwashers must meet ENERGY STAR guidelines, or equivalent.

**Commercial Open, Deep-Fat Fryer:** An appliance, including a cooking vessel, in which oil is placed to such a depth that the cooking food is essentially supported by displacement of the cooking fluid rather than by the bottom of the vessel. Heat is delivered to the cooking fluid by means of an immersed electric element or band-wrapped vessel (electric fryers), or by heat transfer from gas burners through either the walls of the fryer or through tubes passing through the cooking fluid (gas fryers). For 15-inch fryers, they must meet ENERGY STAR requirements, or equivalent. For fryers larger than 15-inches, they must be listed with PG&E or CEE, or equivalent.

#### Griddles:

**Single-Sided Commercial Griddle**: A commercial appliance designed for cooking food in oil or its own juices by direct contact with either a flat, smooth, hot surface (i.e., flat, steel plate) or a hot channeled cooking surface (i.e., polished steel <sup>1</sup>/<sub>2</sub>-inch grooved plate) where plate 129 temperature is thermostatically controlled.

**Double-Sided Commercial Griddle**: A commercial appliance designed for cooking food in oil or its own juices by direct contact with two hot surfaces where temperature is thermostatically controlled. A double-sided griddle has hinged upper griddle plates (platens) that swing down over the food, thereby cooking the food from both sides at once.

**Fry-Top Range**: A multi-purpose appliance used for surface cooking by direct contact with a heated plate, and may also function as a device for roasting, broiling, grilling or any combination of these methods. A fry-top range may have an oven located beneath the cooktop or shelving or may be mounted on top of a refrigerated base.

To be considered energy-efficient, griddles must meet PG&E's specifications, ENERGY STAR (coming soon), or equivalent.

**Commercial Hot Food Holding Cabinet**: An appliance that is designed to hold hot food at a specified temperature, which has been cooked using a separate appliance. Energy efficient Hot Food Holding Cabinets must be listed with ENERGY STAR, PG&E, CEE, or equivalent.

**Ice Machine**: A factory-made assembly (not necessarily shipped in one package) consisting of a condensing unit and ice-making section operating as an integrated unit, with means for making and harvesting ice. It is an assembly that makes up to 4,000 lbs of ice per day at Standard Ratings Conditions, as defined in Section 5.2.1 of ARI Standard 810-2006, and may also include means for storing or dispensing ice, or both. Energy efficient ice machines must meet ENERGY STAR guidelines, or equivalent.

<sup>&</sup>lt;sup>8</sup> Not necessarily limited to the following.

#### **Solid Door Refrigeration:**

**Commercial Refrigerator**: A cabinet designed for storing food or other perishable items at temperatures above 32 degrees Fahrenheit (F) but no greater than 40 degrees F.

**Commercial Freezer**: A cabinet designed for storing food or other perishable items at temperatures of 0 degrees F or below.

**Commercial Refrigerator-Freezer**: A cabinet with two or more compartments, at least one of which is designed for storing food or other perishable items at temperatures above 32 degrees F but no greater than 40 degrees F and at least one of which is designed for storing food or other perishable items at temperatures of 0 degrees F or below.

**Commercial Ice Cream Freezer**: A cabinet designed for storing food or other perishable items at temperatures of –5 degrees F or below.

**Commercial Refrigeration Cabinet:** A refrigerator, freezer, or refrigerator-freezer for storing food products or other perishable items at specified temperatures and designed for use by commercial or institutional facilities.

**Self-contained Refrigeration Cabinet**: A refrigerator, freezer, or refrigerator-freezer which has the condensing unit built into the cabinet.

Must meet ENERGY STAR guidelines or be listed with PG&E or CEE to be considered energy efficient, or equivalent.

**Steam Cooker**: Also referred to as a "compartment steamer," a device with one or more food steaming compartments in which the energy in the steam is transferred to the food by direct contact. Models may include countertop models, wall-mounted models, and floor-models mounted on a stand, pedestal or cabinet-style base. Must meet ENERGY STAR, or equivalent, to be considered energy-efficient.

**Commercial Oven**: A chamber designed for heating, roasting, or baking food by conduction, convection, radiation, and/or electromagnetic energy. To be considered energy-efficient, griddles must meet PG&E's specifications, ENERGY STAR (coming soon), or equivalent.

#### Appendix D Examples of Energy-Efficient Lights<sup>9</sup>

Many areas of the country provide rebates for energy-efficient residential, contact your local utility provider for more information.

**Compact Fluorescent Light Bulb** (CFL): A compact fluorescent light bulb is a fluorescent lamp compressed into the size of a standard incandescent light bulb. Compact fluorescent lamps use 20%–35% of the energy used by incandescent lamps to provide the same amount of illumination (efficacy of 30–110 lumens per watt). They also last about 10 times longer (6,000–12,000 hours).

Like other fluorescent light sources, the light produced by a CFL is caused by an electric current conducted through mercury and inert gases held in a tube. Fluorescent lamps require a ballast to regulate operating current and provide a high start-up voltage. CFLs sold for use as replacements of standard incandescent light bulbs integrate the ballast and lamp into a single unit that can be installed in a standard light socket. Special ballasts are needed to allow dimming of fluorescent lamps. Examples of energy-efficient CFLs are listed by ENERGY STAR and Green Seal.

**Cold Cathode**: A cold cathode light is a tubular light that works by passing an electrical current through a gas or vapor. Cold cathode lights can come in many sizes and colors. Cold cathode lights do not get hot and it has one of the longest lives of any lighting fixture at about 50,000 hours. Unlike incandescent bulbs, the longevity of one of these lights is not shortened by the repeated action of turning it off and on.

**Solid-state lighting (SSL):** Technology that uses semi-conducting materials to convert electricity into light. SSL is an umbrella term that commonly refers to both light-emitting diodes (LEDs) and organic light emitting diodes (OLEDs).

**Light-emitting diodes (LEDs)**: Based on inorganic (non-carbon based) materials. An LED is a semi-conducting device that produces light when an electrical current flows through it. LEDs were first developed in the 1960s but were used only in indicator applications until recently as materials and technology has increased light output. Color is determined by the material used to create the diode. For general illumination LEDs, white light is commonly created through use of either phosphors or a mix of red, green, and blue diodes (RGB). Examples of energy-efficient LEDs are listed by ENERGY STAR.

**Organic light-emitting diodes (OLEDs)**: Based on organic (carbon based) materials. In contrast to LEDs, which are small point sources, OLEDs are made in sheets which provide a diffuse area light source. OLED technology is developing rapidly and is increasingly used in display applications such as cell phones, PDA screens, and advanced televisions. However, OLEDs are still some years away from becoming a practical general illumination source. Additional advancements are needed in light output, color, efficiency, cost, and lifetime.

<sup>&</sup>lt;sup>9</sup> Not necessarily limited to the following.

**Fluorescent Light Fixture (Luminaire)**: A complete lighting unit consisting of a lamp or lamps and ballasting (when applicable) together with the parts designed to distribute the light, position and protect the lamps, and connect the lamps to the power supply.

**Standard (First Generation) T8 Lamps:** Over the last few years, T8 lamps have replaced T12s as the standard fluorescent lamp for commercial lighting, as well as some industrial lighting. Compared with T12 lamps, these 1" diameter lamps offer improved performance including higher efficacy, better lumen maintenance and truer color rendering. There is guidance from CEE on energy-efficient versions of T8.

**High Performance T8 Systems:** Often called "Super T8" these recently developed lamp and ballast systems offer performance levels higher than those achieved by standard T8 systems. The lamps offer higher efficacy levels, longer lamp life, and longer warranties than their standard counterparts. High performance T8 systems are available in versions that operate at a variety of system wattages, however, they all operate more efficiently than standard T8 systems. Selected carefully, Super T8 systems can provide dramatic savings when compared with other fluorescent technologies.

**T5 Systems:** T5 fluorescent lamps are 5/8" in diameter. They are constructed in metric lengths (45.2" for a nominal 4' lamp) and therefore not designed to directly replace 4' T12 or T8 lamps. T5 systems are often promoted as being the next step up in efficiency from T8 systems. For most applications, this is not true. T5 systems are no more efficient than standard T8 systems and are less efficient than High Performance T8 systems. However, because of the optical advantages obtained when using smaller diameter lamps, T5 lamps are very effectively used in special fixtures that shape light to deliver it greater distances, or to spread light across a surface (a ceiling, for example).