

Driving our nation's buildings to low and zero carbon saves money, creates jobs, and leads to a healthier environment and more resilient economy. The table below includes steps that building owners and operators can implement to achieve smart, healthy, and low-carbon commercial kitchens. This document was created as a supplement to Low Carbon Technology Strategies for building types that typically include commercial kitchens: [Primary School](#), [Secondary School](#), [Supermarket](#), [Hospital](#), and [Small Hotel](#). Assess current conditions in your commercial kitchen against the simple, intermediate, and advanced options to begin planning your next steps to reduce carbon emissions.

Technology	Simple	Intermediate	Advanced
Equipment	<ul style="list-style-type: none"> Institute a start-up and shutdown schedule for all cooking and holding equipment Install ENERGY STAR[®] rated or better kitchen equipment Replace conventional ovens with convection ovens Replace high-temperature dishmachines with heat recovery dishmachines Consider installing induction cooktops Replace steamers with closed loop units that recycle heat Repair or replace damaged door gaskets on cooking and holding appliances Properly adjust air shutters on gas appliances (flames should be hard and blue, not soft and yellow) Have a professional check and maintain the dishwashing machine (properly set rinse temperature, pressure, and overflow-bypass, and replace worn rinse-arm nozzles) 	<ul style="list-style-type: none"> Install a time clock or plug load controller on ice machine and set schedule to make the amount of ice that is needed at minimum energy use and cost Replace gas equipment with electric, if possible (if not, purchase most efficient gas equipment) Replace convection oven and steam cooker with a combination oven Replumb all rinse water to cold water (disposals, rack conveyors, dish troughs) 	<ul style="list-style-type: none"> Upgrade the building's electrical system to allow high-power and high-voltage equipment to come online
Ventilation	<ul style="list-style-type: none"> Institute a start-up and shutdown schedule for exhaust hoods In exhaust hoods, replace light bulbs with ENERGY STAR-certified light bulbs and replace fluorescent tubes with Type B tubular LEDs that meet DesignLights Consortium (DLC) technical requirements Position heavy-duty equipment in the middle of the cook line (e.g., underfired broilers or wok ranges) Locate double-stacked ovens or steamers at the end of the hood as a plume control effect Add partial side panels or end panels to cooking appliances and maximize hood overhang Schedule equipment usage to minimize runtime of exhaust hoods Improve capture and containment performance of exhaust hoods so that exhaust airflow rates may be reduced 		<ul style="list-style-type: none"> Replace exhaust hoods with ones that reduce exhaust and makeup airflow rates based on cooking effluents

Technology	Simple	Intermediate	Advanced
Refrigeration	<ul style="list-style-type: none"> • In walk-in coolers/freezers, replace light bulbs with ENERGY STAR-certified light bulbs and replace fluorescent tubes with Type B tubular LEDs that meet DLC technical requirements • Check and properly set thermostats on all refrigeration equipment • Install automatic door closers to walk-in refrigerators • Install swinging doors that latch upon closing to walk-in refrigerators • Install strip curtains or plastic doors on cooler and freezer doors • Install an audible or visual alarm to alert occupants when a refrigerator door has been left open • Clean walk-in refrigerator evaporator and condenser coils, ensure proper airflow, and straighten damaged fins • Maintain refrigerator doors by replacing worn gaskets, aligning doors, enabling automatic door closers, and replacing worn or damaged strip curtains • Avoid placing storage racks against evaporator coils in walk-in refrigerators to promote airflow 	<ul style="list-style-type: none"> • In walk-in coolers/freezers, install occupancy sensors or timers on lights • Reduce the number and/or adjust the timing of defrost cycles for walk-in freezers (keep the number of cycles high enough to prevent frost buildup) 	<ul style="list-style-type: none"> • Install thermal energy storage and controls to walk-in freezers for load shifting
Water Heating	<ul style="list-style-type: none"> • Install low-flow fixtures to minimize both water and energy use • Install a low-flow (1 gpm or less) pre-rinse spray valve at the dishmachine • Set the thermostat of storage water heaters at the minimum temperature consistent with avoiding microbiological growth in the tank (typically 135°F) or the minimum required to supply temperature for the end use (e.g., 140°F for dishwashing machines) 	<ul style="list-style-type: none"> • Insulate hot water lines • Control the hot water recirculation pump with a time clock so that the pump is turned off when the facility is closed 	

Need additional support? See the [Path to Zero: Getting Started Guide](#). Reach out to [Better Buildings](#) for support on your path to low carbon.