

ELECTRICAL APPLIANCES & EQUIPMENT

– Efficiencies that can add to your bottom line

Changing the way that you use electrical appliances and equipment and knowing what energy efficient characteristics to look for when you're upgrading, can significantly reduce your equipment and appliance running costs.

The energy cost of your equipment is made up of your direct energy consumption plus the indirect impact of each piece of equipment on the energy consumption of other systems, such as your heating, ventilation and air condition (HVAC) system.

USE YOUR EQUIPMENT MORE EFFICIENTLY

The way that you use equipment often has a greater bearing on its running costs than the energy load rating (kW) of the equipment itself. You can reduce the energy cost of your existing equipment by:

- **Switch it off** – It is common for all equipment to be switched on at the beginning of the day and left on all day regardless of whether it is being used. A simple policy of switching equipment on when it is needed and off when you have finished using it will save you money by reducing 'standby' power usage. If you have equipment that cannot be turned off, consider turning it down to the lowest level possible.
- **Undertake regular cleaning and maintenance** – All equipment requires maintenance to ensure it continues operating efficiently. This can be as simple as frequent cleaning by operations staff, or it may involve servicing by an experienced technician. Equipment that is dirty and/or not maintained generally breaks down more frequently, creates excess heat, costs more to run and has a shorter operational life.

UPGRADE TO ENERGY EFFICIENT EQUIPMENT

Once you have made sure you are using your equipment efficiently, you should consider the efficiency of the equipment itself.

Generally speaking, the best time to make sure your equipment is energy efficient is when you are buying it. Look for appliances and equipment that has an Energy Rating label that indicates how much energy it uses. You can then make an informed decision about its running costs, remembering that the cumulative energy costs of running the equipment over its life is likely to be significantly more than the upfront cost of the equipment itself.

It is also worth investigating opportunities to upgrade your existing equipment so it operates more efficiently.

ENERGY EFFICIENCY OPPORTUNITIES

Opportunities to improve your existing equipment and characteristics to look for when upgrading include:

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| Ovens | • use timers to accurately set pre-heat, cooking and cooling duration |
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Ovens	<ul style="list-style-type: none"> • switch ovens off immediately at the end of the cooking cycle • ensure ovens are sufficiently insulated to reduce heat escaping • capture waste heat for use in other systems, for example, store heating • ensure air conditioning temperature sensors are not located near ovens
Exhaust hoods	<ul style="list-style-type: none"> • turn exhaust hoods off when your kitchen is idle • position the hood as close as possible to the cook top and supply 'make-up' air to the cook top to balance extracted air volumes. This reduces the load on your HVAC system • install a variable speed drive on the hood fan and install hood controllers to adjust your exhaust fan speed in response to changes in temperature, smoke, or vapour
Cook tops	<ul style="list-style-type: none"> • use automatic shut off sensors that turn cook tops off when you aren't using them • install induction cook tops as they are 10-15% more efficient than other methods
Mincers / slicers	<ul style="list-style-type: none"> • select an appropriate size to minimise energy use
Dishwashers	<ul style="list-style-type: none"> • fill them up, rather than run them half empty • use the cold wash cycle where appropriate
Microwaves	<ul style="list-style-type: none"> • switch them off when not in use to minimise 'standby' energy consumption
Refrigeration	<ul style="list-style-type: none"> • place refrigerators in the coldest part of the kitchen, that is, away from ovens • keep their doors closed • undertake regular maintenance, defrosting and cleaning
Vending machines	<ul style="list-style-type: none"> • install timers to turn them off outside store hours (but only if they contain non-perishable food items) • contact the vendor and ask them if they have newer models available that are more energy efficient
POS / registers	<ul style="list-style-type: none"> • install timers to turn them off outside store operating hours
Televisions	<ul style="list-style-type: none"> • install timers to turn them off outside store operating hours • replace plasma flat-screens with LED LCD flat-screens
Computers & peripherals	<ul style="list-style-type: none"> • install timers to turn them off outside store operating hours • replace old style computer monitors with newer LED LCD flat screen type monitors

THE BUSINESS CASE – CHOOSING ENERGY EFFICIENT OVENS

A new deck oven costs around \$50,000 and costs more than \$14,000 in electricity per annum. A supermarket has a choice of two suitable ovens, with one offering a 20% saving in energy use through improved insulation, better door seals and more accurate temperature controls, but costs \$6,000 more. The investment comparison shown below demonstrates that the high efficiency oven is a better investment.

Cost	\$\$\$
Benefit	☺☺☺
Simplicity	✓

	Standard Oven	Energy Efficient Oven
Initial cost	\$50,000	\$56,000
Estimated energy cost	400kW/day x \$0.12/kWh x 300days/yr = \$14,400 per annum	80% x (400kW/day x \$0.12/kWh x 300days/yr) = \$11,520 per annum

Net energy savings from energy efficient oven: \$14,400 - \$11,520 = \$2,880 per annum

Simple payback on \$6,000 energy efficient investment: \$6,000 / \$2,880 = 2.1 years

Source: Good energy practice guide – Improve energy efficiency and increase profits in shop bakeries.

MORE INFORMATION

For further information about how your HVAC system works and the opportunities to improve its energy efficiency, including an HVAC action planning checklist, see **Section 4.5** of the Handbook.

Cost	\$ = lowest cost, \$\$\$ = highest cost
Benefit	☺ = lesser energy efficiency, ☺☺☺ = greater energy efficiency
Simplicity	✓ = requires external/technical expertise, ✓✓ = can be undertaken in-house but may require some external expertise, ✓✓✓ = can be undertaken in-house.