



energyanswers

For small businesses

countryenergy

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Appliance energy usage tables

When using the following energy usage tables, please be aware that the costs quoted for the appliances should be taken as a guide only, as factors such as the size of the business, quality of the appliance and personal preferences can alter these costs considerably. The ratings in watts are an average estimate.

Call our free advice line **1800 ENERGY** or
1800 363 749, 8.30am to 5pm, Monday to Friday
or visit www.countryenergy.com.au/energyanswers

Lighting

Energy efficiency tips

- Implement a maintenance program for your lighting to ensure it is operating at maximum efficiency
- Use natural lighting where possible - consider installing a skylight or sky tube to enhance natural lighting
- Consider using light colours on office walls to enhance the effect of natural lighting
- Consider installing multiple switches to control lights separately, rather than a single switch to control all lights
- Install timer switches and/or sensor devices to reduce unnecessary lighting costs
- Talk to a specialist about surveying, designing, supplying, installing and commissioning your lighting needs. energyanswers even offers finance packages, to negate the need for capital expenditure. As an example, higher-efficiency tubes use approximately 40 per cent less power than old fluorescent light fittings.

Energy saving checklist

Use this checklist to help you identify possible areas on which you can improve your energy efficiency.

| | Yes |
|---|--------------------------|
| Does the building have clear/opaque roofing or a skylight to allow natural sunlight in? | <input type="checkbox"/> |
| Have staff/personnel received training or advice about best practice use of lighting controls and switching off lights when not in use? | <input type="checkbox"/> |
| Have you developed a maintenance program for your lighting? | <input type="checkbox"/> |
| Are timer switches and/or sensor devices installed to control indoor/outdoor lighting? | <input type="checkbox"/> |

Appliance energy usage table

| LIGHTING TYPE | Rating (Watts) | Cost/kWh |
|--------------------------------|----------------|----------|
| Fluorescent 18W | 25 | \$0.006 |
| Fluorescent 36W | 45 | \$0.011 |
| Fluorescent 28W | 30 | \$0.008 |
| Incandescent 75W | 75 | \$0.019 |
| Incandescent 100W | 100 | \$0.025 |
| Halogen down lights 50W (240V) | 50 | \$0.013 |
| Halogen down lights 20W (12V) | 30 | \$0.008 |
| Compact fluorescent 11W | 11 | \$0.003 |
| Compact fluorescent 15W | 16 | \$0.004 |
| Compact fluorescent 20W | 20 | \$0.005 |
| Mercury vapour 125W | 140 | \$0.035 |
| Metal Halide 70W | 70 | \$0.018 |

Office and shop equipment

Energy efficiency tips

- Switch office and shop equipment off at the powerpoint when not in use - equipment on standby still uses electricity
- Ensure your computers are operating on their most efficient power plans.

Energy saving checklist

Use this checklist to help you identify possible areas on which you can improve your energy efficiency.

| | Yes |
|--|--------------------------|
| Is office and shop equipment switched off at the powerpoint when not in use? | <input type="checkbox"/> |
| Are all computers operating on their most efficient power plans? | <input type="checkbox"/> |

Appliance energy usage table

| Equipment type | Rating (Watts) | Cost/kWh |
|------------------------------------|----------------|----------|
| Cash register | 400 | \$0.090 |
| EFTPOS machine | 40 | \$0.009 |
| Cordless phone (single) | 7 | \$0.002 |
| Answering machine | 6 | \$0.001 |
| Vending machine (non refrigerated) | 300 | \$0.067 |
| Television CRT - small | 50 | \$0.011 |
| Television CRT - large | 220 | \$0.049 |
| Television Plasma - large | 300 | \$0.067 |
| Television LCD - small | 60 | \$0.013 |
| Television LCD - large | 160 | \$0.036 |
| Projector | 290 | \$0.065 |
| DVD/VCR | 30 | \$0.007 |
| Stereo | 50 | \$0.011 |
| Stereo with separate amplifier | 80 | \$0.018 |
| Computer hard drive | 120 | \$0.027 |
| LCD Monitor | 40 | \$0.009 |
| CRT Monitor | 80 | \$0.018 |
| Laptop computer | 40 | \$0.009 |
| Printer | 60 | \$0.013 |
| Fax machine | 40 | \$0.009 |
| Label Printer | 60 | \$0.013 |
| Large photocopier | 150 | \$0.034 |
| Server and network equipment | 600 | \$0.135 |
| Kodak Photo Station | 120 | \$0.027 |
| Photo Processing Machine | 5000 | \$1.124 |

Heating and cooling

Energy efficiency tips

- Insulation is an effective way of reducing heating and cooling costs - consider insulating your ceiling and walls
- Roof ventilation, air curtains, and window films are simple ways you can help reduce the cost of heating and cooling
- Heat reflective paint can help keep the room at the optimum temperature
- Ensure air conditioner controls are easily accessible and consider installing a zoning system to control heating and cooling to rooms not in use
- Ensure air conditioners and heaters are maintained according to the manufacturer's specifications
- Where possible, remove any large objects that may block ventilation or restrict the flow of air around rooms.

Winter heating

- The optimal setting for heater is between 18 and 20 degrees. Every degree higher can increase your running costs by up to 15 per cent
- Use ceiling fans to help push down the heat that has risen to the ceiling to keep the room at optimum temperature
- Make sure you seal draughts around doors and hang close-fitting, heavy curtains (preferably with pelmets) around windows. Draughts can increase your heating costs by up to 25%
- Review the position of your heater's thermostat. Is it near an open door or draughty area?
- Consider using infrared heating options, as they warm the skin (the same as some bathroom light/heat/fan combinations) and not the surrounding air. Air conditioning large areas can be both expensive and impractical.

Summer cooling

- The optimal setting for your air conditioner is between 23 and 26 degrees. Every degree lower can increase your running costs by up to 15 per cent
- Install ventilators to enhance cooling and to help keep the room at optimum temperature
- Keep hot air out by closing all external doors and windows. This reduces the amount of work an air-conditioner has to do to maintain a comfortable temperature inside
- Beat the heat. If a hot day is forecast, turn the air conditioner on early. It's more effective to maintain a comfortable internal temperature 'from scratch' rather than having to reduce the temperature in a workspace that has already reached uncomfortable levels
- If you need to reduce the temperature quickly, run the fan on high speed only until the desired temperature has been reached, then reduce the setting to low to maintain the temperature
- Is the air-conditioning unit suitable for your business? Needs may vary depending on your work space layout, partitioning, number of employees, number of windows, renovations etc. A range of factors can impact on the effectiveness of air conditioning and it's vital to purchase an air conditioning unit that best suit your needs
- Check and clean filters on a regular basis. Approximately 90 per cent of air conditioning failures can be attributed to dirty or blocked filters. A dirty filter also forces the unit to work in overdrive, chewing up unnecessary energy.

Heating and cooling (continued)

Energy saving checklist

Use this checklist to help you identify possible areas on which you can improve your energy efficiency.

| | Yes |
|---|--------------------------|
| Does the building have ceiling insulation? | <input type="checkbox"/> |
| Does the building have wall insulation? | <input type="checkbox"/> |
| Have the walls been painted with "heat reflective" paint? | <input type="checkbox"/> |
| Is the air conditioner or heater switched off when not required, and set within the optimal temperature ranges? | <input type="checkbox"/> |
| Are there any windows and doors left open when the air conditioner or heater is on? | <input type="checkbox"/> |
| Have you sealed draughts around doors and windows, and installed adequate window coverings? | <input type="checkbox"/> |
| Is there a lot of heat-producing equipment in air conditioned rooms? Can this equipment be removed or switched off? | <input type="checkbox"/> |

Appliance energy usage table –

| COOLING AND HEATING TYPE | Rating (Watts) | Cost/kWh |
|---|----------------|----------|
| Portable fan | 40 | \$0.009 |
| Wall/Ceiling Fans | 60 | \$0.013 |
| Reverse cycle air conditioner | 2,500 | \$0.562 |
| Reverse cycle air conditioner | 8,000 | \$1.798 |
| Reverse cycle air conditioner | 1,000 | \$0.225 |
| Reverse cycle air conditioner | 1,500 | \$0.337 |
| Ducted evaporative | 800 | \$0.180 |
| Ducted reverse cycle | 2400 | \$0.539 |
| Personal fan heater | 1,200 | \$0.270 |
| Personal fan heater | 2,400 | \$0.539 |
| Reverse cycle heat pump/air conditioner | 1,000 | \$0.225 |
| Reverse cycle heat pump/air conditioner | 1,500 | \$0.337 |
| Oil heater | 1,200 | \$0.270 |
| Oil heater | 2,400 | \$0.539 |
| Radiant heater | 1,200 | \$0.270 |
| Radiant heater | 2,400 | \$0.539 |

Refrigeration

Energy efficiency tips

- The most efficient temperature to run your fridge is between 3 degrees C and 4 degrees C and your freezer is between -15 degrees C and -18 degrees C
- Ensure fridge and freezer doors aren't left open unnecessarily
- If you don't have a frost-free freezer, you should consider defrosting it every six months or whenever the frost build-up reaches around 5mm
- To test the condition of the seals on your fridge, place a piece of paper in the door. It should hold firm when the door is closed. If it doesn't, consider replacing the seals
- Where possible, consolidate stock to reduce the need for additional refrigeration, and cover display units when not in use.

Energy saving checklist

Use this checklist to help you identify possible areas on which you can improve your energy efficiency.

| | Yes |
|---|--------------------------|
| Are the seals on your fridge or freezer old and in need of replacement? | <input type="checkbox"/> |
| Can stock be consolidated to reduce the need for additional refrigeration? | <input type="checkbox"/> |
| Are refrigerated display units covered when not in use? | <input type="checkbox"/> |
| Are refrigeration units located in a cool area with sufficient ventilation space? | <input type="checkbox"/> |
| Is heat from refrigeration units accessible to air conditioned space? | <input type="checkbox"/> |
| Are thermostat temperatures set correctly? | <input type="checkbox"/> |

Appliance energy usage table

| REFRIGERATION TYPE | Rating (Watts) | Cost/kWh |
|----------------------------------|----------------|----------|
| Bar Refrigerator 50L - domestic | 40 | \$0.009 |
| Bar Refrigerator 100L - domestic | 120 | \$0.027 |
| Bar Refrigerator 120L - domestic | 150 | \$0.034 |
| Refrigerator 150L - domestic | 140 | \$0.031 |
| Refrigerator 250L - domestic | 170 | \$0.038 |

| | | |
|---------------------------------|-------|---------|
| Refrigerator 400L - domestic | 230 | \$0.052 |
| Refrigerator 500L - domestic | 350 | \$0.079 |
| Refrigerator 700L - commercial | 450 | \$0.101 |
| Refrigerator 1500L - commercial | 650 | \$0.146 |
| Freezer chest - 140L | 125 | \$0.028 |
| Freezer chest - 200L | 160 | \$0.036 |
| Freezer chest - 280L | 230 | \$0.052 |
| Freezer upright glass - 1 door | 800 | \$0.180 |
| Freezer upright glass - 2 door | 1,100 | \$0.247 |
| Freezer upright - 1 door | 700 | \$0.157 |
| Freezer upright - 2 door | 1,100 | \$0.247 |
| Soft drink fridge - 1 door | 700 | \$0.157 |
| Soft drink fridge - 2 door | 800 | \$0.180 |
| Soft drink fridge - 3 door | 1,200 | \$0.270 |
| Open display fridge - small | 1,350 | \$0.303 |
| Open display fridge - medium | 1,700 | \$0.382 |
| Open display fridge - large | 2,450 | \$0.551 |
| 2 door display coolroom | 1,000 | \$0.225 |
| 3 door display coolroom | 1,400 | \$0.315 |
| 4 door display coolroom | 1,800 | \$0.404 |
| 5 door display coolroom | 2,400 | \$0.539 |
| Coolroom - small | 1,000 | \$0.225 |
| Coolroom - medium | 1,700 | \$0.382 |
| Coolroom - large | 3,000 | \$0.674 |
| Freezer room - small | 1,600 | \$0.360 |
| Freezer room - medium | 2,300 | \$0.517 |
| Freezer room - large | 2,700 | \$0.607 |
| Countertop glass display fridge | 145 | \$0.033 |
| Glass display fridge - small | 105 | \$0.024 |
| Glass vaccine fridge - large | 300 | \$0.067 |
| Wine fridge | 160 | \$0.036 |
| Coke fridge | 550 | \$0.124 |
| Water cooler | 60 | \$0.013 |
| Vending Machine | 650 | \$0.146 |
| Ice Cream Display Units | 650 | \$0.146 |

Kitchen appliances

Energy efficiency tips

- Only use your dishwasher when it's full and where possible use the 'economy' setting
- Switch all kitchen equipment off at the powerpoint when not in use.

Energy saving checklist

Use this checklist to help you identify possible areas on which you can improve your energy efficiency.

| | Yes |
|--|--------------------------|
| Is all kitchen equipment turned off at the powerpoint when not in use? | <input type="checkbox"/> |
| Has equipment been certified by Energy Star? | <input type="checkbox"/> |
| Do you only use the dishwasher when full, and use the economy setting? | <input type="checkbox"/> |
| Is the dishwasher connected to hot or cold water? | <input type="checkbox"/> |

Appliance energy usage table

| KITCHEN APPLIANCE TYPE | Rating (Watts) | Cost/kWh |
|--------------------------------------|----------------|----------|
| Microwave | 1,000 | \$0.225 |
| Bain maree - small | 800 | \$0.180 |
| Bain maree - large | 2,400 | \$0.539 |
| Rangehood - small | 60 | \$0.013 |
| Rangehood - large | 180 | \$0.040 |
| Dishwasher (domestic size hot water) | 1,600 | \$0.360 |
| Industrial Size Dishwasher | 2,250 | \$0.506 |
| Stovetop (1 burner) | 1,000 | \$0.225 |
| Stovetop (4 burner) | 3,500 | \$0.786 |
| Kettle | 1,500 | \$0.337 |
| Urn | 1,000 | \$0.225 |
| Focaccia toaster | 1,200 | \$0.270 |
| Small Toaster | 600 | \$0.135 |
| Blender | 450 | \$0.101 |
| Benchtop Juicer | 250 | \$0.056 |
| Cappuccino machine - small | 500 | \$0.112 |
| Cappuccino machine - large | 4,500 | \$1.011 |
| Coffee Grinder | 200 | \$0.045 |
| Deep fryer - single well | 15,000 | \$3.371 |
| Deep fryer - double well | 32,000 | \$7.190 |
| Meat slicer | 200 | \$0.045 |
| Electronic scales | 40 | \$0.009 |
| Milkshake mixer | 120 | \$0.027 |
| Pie oven - small | 600 | \$0.135 |
| Pie oven - large | 1,200 | \$0.270 |
| Other | 100 | \$0.022 |

Hot water systems

Energy efficiency tips

- A dripping hot water tap can waste the equivalent of up to 10 average bathtubs of water a month. Make sure you fix it as soon as possible
- Replace your electric water heater with a gas, solar or heat-pump system. The savings you make over the long-term should outweigh this cost
- Switch the hot water system off when it is not regularly in use
- Ensure the pipes, tank and fittings of the hot water system are regularly inspected
- Install timers on instantaneous hot water services to limit their operation to business hours only
- Ensure any hot water services are well insulated in cooler climates.

Energy saving checklist

Use this checklist to help you identify possible areas on which you can improve your energy efficiency.

| | Yes |
|--|--------------------------|
| Is there an adjustable thermostat installed on the HWS? | <input type="checkbox"/> |
| Are showers provided in the building? | <input type="checkbox"/> |
| Is the HWS switched off when not regularly in use? | <input type="checkbox"/> |
| Are the pipes, tank and fittings of the HWS regularly inspected? | <input type="checkbox"/> |
| Are there any hot water saving features, such as 3-star rated showerheads installed in the building? | <input type="checkbox"/> |

Appliance energy usage table

| HOT WATER TYPE | Size of tank (litres) | Cost/kWh |
|-------------------------------|-----------------------|----------|
| Electric storage - Off Peak 1 | 315 | \$0.071 |
| Electric storage - Off Peak 2 | 315 | \$0.071 |
| Zip Hot Water 2400W | 25 | \$0.006 |
| Electric storage - Off Peak 1 | 315 | \$0.071 |
| Electric storage - Off Peak 2 | 315 | \$0.071 |

General efficiency tips

- Install Power Factor Correction equipment which can reduce your monthly electricity charges and help beat hidden running costs of motors and other inductive loads, such as transformers and ballasts. These capacitors work as silent reactive power 'generators' so the total amount of electricity demand decreases
- Ensure your workforce is aware of, and committed to, your energy management policy or plan. This could include creating an energy management team, encouraging staff to share energy saving ideas, establishing benchmarks or targets and regularly monitoring energy usage
- Undertake a comprehensive energy audit by a specialist. This will not only identify ways to reduce energy consumption and greenhouse gas emissions, but improve your bottom line
- Keep external doors shut, as the hot or cold air outside makes your air conditioner or heater work harder for the same effect. If you think a shut door is a 'turn-off' for your customers, look into installing an automated entry. If you have evaporative air-conditioning, it works better if a small window is left open.

Sporting amenities

- If appropriate, put swimming pool pumps on an off-peak meter, ensuring they are in use when electricity is at its cheapest
- Pool water temperatures general range from 25 to 27 degrees Celsius. The lower temperature is recommended for competition swimming, but this may be too cool for young children and the elderly. A one degree rise in temperature could cost 10 to 30 per cent more in energy costs, depending on your location. Set your thermostat accordingly
- Turn the temperature down, or turn the heating off, whenever the pool won't be used for several days. This will help save energy and money. It's a myth that it takes more energy to heat a pool back up to a desired temperature than you save by lowering the temperature or turning the heater off

- If sporting fields are being used at night, investigate sensors so you are not relying on the users to turn the lights off
- New technology means that you can pass on the costs of lighting to end users, such as sporting clubs. Users will be more likely to conserve energy if the full costs are coming out of their pocket.

Agribusiness

- Investigate running pumps, compressors and other equipment on off-peak or time-of-use meters
- Ensure all three-phase electric motors are regularly serviced and are operating at their most efficient.
- Use energy efficient lighting and heating for activities such as poultry and pork production
- Use a variable speed pump, water-cooled plate cooler and the right compressor to help save money
- Try a heat recovery system from your refrigerator or compressor to pre-heat water
- New technologies mean that methane from animal manure can be recovered to produce electricity, heat and hot water. You need more than 150 large animals to cost effectively generate electricity, but this could also reduce overall operating costs, offsetting costs associated with sewage, agricultural, or animal waste disposal
- In regard to ventilation, remember that one large fan is usually more efficient than a number of small ones. When two fans have the same blade diameter, the one with the lower horsepower or motor current input rating is usually more energy efficient. If two fans have the same airflow and static pressure capabilities, the one with the lower-speed motor is usually quieter and more energy efficient.

Mining and Manufacturing

- Operate furnaces and boilers at, or as close as possible to, design capacity
- Adequately insulate air or water-cooled surfaces, particularly those exposed to furnace equipment. Use proper furnace insulation to reduce wall-heat losses
- Minimise air leakage into the furnace by sealing openings
- Investigate whether furnace exhaust heat can be used in other parts of the manufacturing process.

Water and Waste

- Fix dripping taps, damaged hoses and leaky pipes - one leaking tap can waste up to 2,000 litres of water a month. To reduce leaks in taps, turn taps off
- Read your water meter at closing time. Ensure that no water is used overnight. Read the meter in the morning, before any water is used. Compare the figures, if the morning reading is higher then you have a water leak or water leaks that need to be found and fixed
- When cleaning, get staff to use a bucket to wash and rinse where possible, instead of running the taps or hose
- Work with suppliers to reduce packaging on goods supplied. Suppliers may be able to supply goods packaged in reusable or recyclable packaging
- Recycle cardboard, paper, metal, glass and plastic. Use bins with clear signage to encourage recycling. Visit www.recyclingnearyou.com.au
- Conduct a simple visual assessment on what ends up in your main rubbish bin
- Re-use where possible. Is there a business nearby that could use a material from your bin? Or can you change your processes or patterns to reduce off cuts or bi-products?

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