

Energy Efficiency Fact Sheet: HVAC (Heating, Ventilation and Air-Conditioning)

HVAC equipment typically accounts for 30-50% of energy consumption in a business and can be a lot more if it is poorly operated. The good news is that significant savings can be achieved with simple adjustments in the way the equipment is used. If you work with an air-conditioning technician and an energy auditor, as much as 70% of electricity costs can be saved through energy efficiency.

Quick and easy things to do

- 💡 **Keep HVAC systems regularly maintained.** Keeping fans, filters & coils clean, changing worn belts & fans, repairing insulation & leakages can reduce energy costs by up to 30%. Anti-static fluid can be applied to coils and fans to retard further grime build-up.
- 💡 **Minimise heat-producing equipment.** All electrical equipment generates heat, which works against air-conditioners in summer. Relocating office equipment, refrigerators, vending machines, water coolers etc to naturally-cooled rooms will save on cooling costs.
- 💡 **Ensure thermostat temperatures are set correctly.** Summer settings should be around 24°C and winter settings around 20°C. Every degree cooler in summer and warmer in winter will increase energy consumption by 10%.
- 💡 **Use ceiling or floor fans when A/C units are on.** Using fans in air conditioned rooms will enable you to raise the thermostat setting a degree or two compared to your normal setting. Fans will also help to better circulate the cooled air. Reverse fan direction in winter if possible.
- 💡 **Switch HVAC equipment off in areas of low usage.** Use timer switches and zone controls to optimise usage.
- 💡 **Avoid peak demand periods.** Rearrange work schedules to allow HVAC equipment to be used less during 'peak' times and more during 'shoulder' and 'off-peak' times.

Energy Savers



Clean coils



Set temperature to 20-24 °C



Ceiling fans



HVAC Timer



Load shifting

Investments in Energy Efficiency

- 💡 **Install window tinting or external shading to block out direct sunlight.** Direct sunlight can cause rooms to overheat and cause air-conditioning systems to over-cycle. Solar tinting film and external shading (e.g. louvres) can reduce heat gain through windows by up to 80%, which will reduce the need for air-conditioning.
- 💡 **Insulate roofs, walls, floors and ducts.** Insulation will reduce heat gain in summer and heat loss in winter, which will reduce the need for gas or electric heating and cooling systems. Insulation around ducts minimises heat leakage.
- 💡 **Recover waste heat.** Heat recovered from process equipment like oven flues and exhausts can be re-used to heat offices and work areas.
- 💡 **Install A/C economisers and inverter-style units.** Inverter air-conditioners respond more readily to the indoor air temperature conditions, which results in around 30% less energy consumption. Economisers allow them to make the most of outside air when the air temperature is favourable, which reduces energy usage by around 15%.
- 💡 **Upgrade to energy efficient products.** An energy audit will determine which upgrades are profitable for your business. Register for a free energy audit at 3eproject.org.au.

Did you know?

- 💡 Leaving doors and windows open when air conditioners are on can increase energy costs by up to 50%.
- 💡 Radiator heaters are more cost-effective than air heaters in fixed seating areas like waiting rooms, office cubicles and restaurant tables as they are more effective at heating objects.

“We changed all our old window-box air-conditioners with energy efficient inverter air-conditioners and saved \$3200 per year!”

- **Mohammed, Guildford**

For further information contact the 3E Project Team on 1800 242 845 or by email at info@3eproject.org.au

Energy Savers



Window shade & louvre



Insulation types



Inverter air-conditioner



Infrared radiant heater



Solar air conditioner

