

Cooling Systems

Which cooling system is more energy efficient?

Cooling system	Energy efficiency
Fan	★★★★★
Evaporative cooler (portable)	★★★★★
Evaporative cooler (ducted)	★★★★
Reverse cycle A/C (4-5 star)	★★★
Reverse cycle A/C (2-3 star)	★★
Ducted Reverse cycle A/C	★

Fans

Portable fans are best suited for personal cooling, whilst ceiling fans are great for cooling rooms. Moving air has a cooling effect on the skin and will increase your tolerance to higher temperatures.

Air conditioners

Evaporative coolers

Modern evaporative coolers have low energy use and can be portable, wall mounted, split or ducted systems. A fan is used to draw in hot, dry air from outside which passes through a water filter. The fan then pushes this cooler, humid air into the home. Evaporative coolers work best in low humidity.

Refrigerated systems

Refrigerated air conditioners work using a refrigerant gas to remove heat from inside the home. This heat is pumped outside while cooler air is pumped inside. Refrigerated systems can be portable, wall mounted, split or ducted systems. Ducted systems are the most expensive and have the highest energy use.

Reverse cycle

These are refrigerated systems that provide both heating and cooling by reversing the refrigeration process in winter.

When buying a new cooling system, ensure it has a high Energy Star Energy Rating. To compare the energy efficiency of cooling systems, visit the Energy Rating website: www.energyrating.gov.au

There are a number of ways you can keep your home cool in summer and reduce your energy use.

By considering factors such as your home's orientation, the position of the sun throughout the day, heat transfer through windows, afternoon breezes, shading and insulation, you can increase the efficiency of your cooling systems, or reduce the need for artificial cooling completely.

Use air conditioners as a last resort. If you are using an air conditioner to keep cool in summer, ensure it is an energy efficient model and suitable for your household's needs. Over a third of energy use in the home is for heating and cooling. Set air conditioner thermostats to 24 - 27°C. Each degree you lower your thermostat (cooler) increases energy consumption by 10%. Direct cool air upwards, as it will gradually fall, and close doors to rooms that aren't being used. Clean filters regularly to keep cooling systems operating efficiently.

For more information on energy efficiency visit *Think Green – Energy* on the City of Joondalup website: www.joondalup.wa.gov.au



T: 08 9400 4000
F: 08 9300 1383
Boas Avenue Joondalup WA 6027
PO Box 21 Joondalup WA 6919

www.joondalup.wa.gov.au

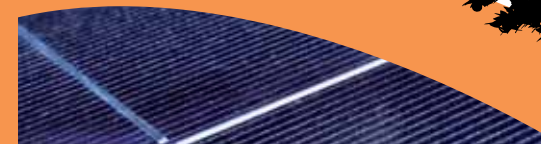
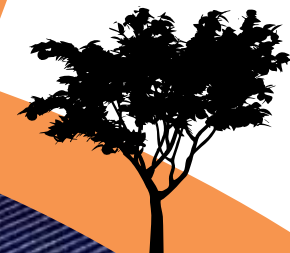
*This document is available in alternate formats upon request.
Printed on 100% recycled paper.*



Think Green

ENERGY

Summer Cooling



North – Block sunlight with appropriate shading

Shading

Shading structures, such as eaves and deciduous plants, block high angle summer sun without blocking low angle sun in winter. Additional shading for paved areas will keep the home cooler.

Curtains

Keep curtains closed during the day to reduce heat gain.

Solar PV System

Solar photovoltaic (PV) systems use light energy from the sun to generate power and operate best when facing north. PV systems reduce greenhouse gas emissions and electricity costs.

Solar Hot Water

Solar hot water systems use heat energy from the sun to warm water.

Landscaping

Landscaping around the home has a cooling effect. Hard surfaces can absorb heat or reflect it into the home, increasing heat gain.

East – Block out the morning sun

Shading

External vertical shading is best used to block morning sun. Shutters, louvres and awnings are ideal. Outside shading of windows prevents far more heat gain than inside shading such as curtains and glazing. Shade sails and plants can also be used for shading.

Curtains

Close curtains during the day to keep heat out. Thick, block-out curtains with pelmets are ideal.

Insulation

Wall insulation reduces heat gain. Choose wall insulation with an R-value of 2.8 or above and ceiling insulation with an R-value of 4.1 or above.



West – Afternoon sun can make this the hottest part of the house

Shading

External vertical shading is best used to block harsh afternoon sun. Shutters, louvres and awnings are ideal. Outside shading of windows prevents far more heat gain than inside shading such as curtains and glazing. Shade sails and plants can also be used for shading.

Windows

Open windows on both sides of the house to let the afternoon sea breeze flow through the whole house.

Curtains

Close curtains during the day to keep heat out. Thick, block-out curtains with pelmets are ideal.

Insulation

Wall insulation reduces heat gain from the harsh afternoon sun.



South – Make the most of cool afternoon breezes

Windows

Open windows on both sides of the house to let the afternoon sea breeze (from the south-west) flow through the whole house.

Landscaping

Vegetation around your home will help cool breezes before they enter the house.

Draught Sealing

Seal external doors and windows to reduce heat gain.

Curtains

Keep curtains closed during the day to reduce heat gain.

Cooling

Wear light clothing or use fans to keep cool.

