

Energy Savings

Save up to 40% on running costs! Well, you'd better tell me a little more about your application first, as the range for saving varies greatly between different projects. It might be as high as 60% or only 20% depending on what you are comparing to.

The government standards that regulate our industry do not specifically address all application issues that will affect your energy use such as hours of operation, budget, location, building style and age, controls, to name a few.

With the right application and selection advice your investment in energy efficient air conditioning technologies can see you achieving great savings.

Let's consider the key components that consume our energy; compressor on cooling cycle, compressor on heating cycle and Indoor Fan.

What are you comparing it to?

[A modern equivalent](#)

OR

[Older technology](#)

A different style of product such as an air cooled package unit to a VRF.

Our experience tells us that there is a different answer for most applications. We suggest there are two main categories:

1. Replacing old technology R22 replacement.
2. Comparing modern technologies, STD vs. ECO.

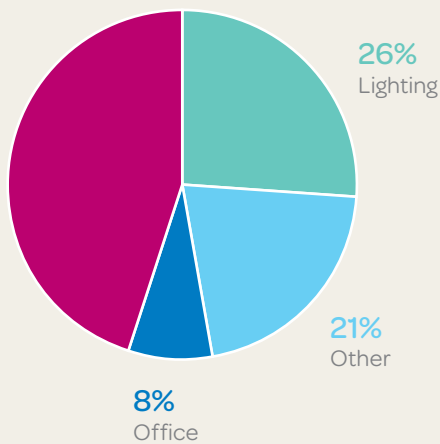
1. Replacing old technology

Air conditioning can often consume up to 50% of the total energy usage of a building.

HVAC accounts for

45%

of the total Energy Profile



Replacing old equipment again raises a lot of questions:

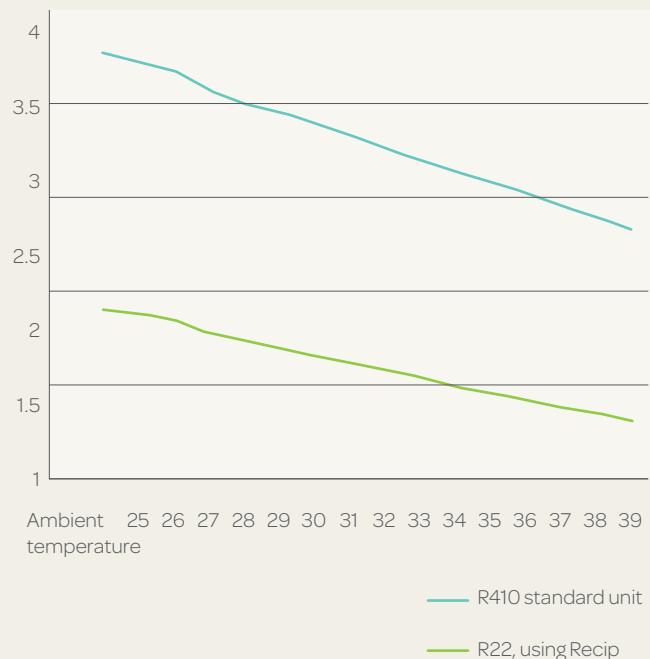
- How old?
- What refrigerant?
- Does the system have economy cycle?
- How smart are the controls?
- Other energy savings; lights, outside air, filtration
- Cost analysis also needs to include maintenance costs
- Reason to change:
 - i. Efficiency
 - ii. Maintenance costs
 - iii. Failure
 - iv. Not maintaining conditions.
- What standard of replacement product:
 - i. Standard
 - ii. ECO or higher efficiency system.

When selecting the replacement equipment you also need to consider standard system design principles such as, "What are the peak loads?" level of control required, budget, physical restraints, commissioning and maintenance.

This graph shows the difference in the Energy Efficiency Ratio (EER) at various outdoor temperatures between a current standard unit and a 20 year old unit. The higher the EER, the lower the energy input for the cooling capacity.

This has come about through great changes in compressor and fan technology.

Typical savings will be in the order of 25% just by changing to newer AC technology, controls such as economy cycle, energy efficient lighting and building insulation can lead to further savings.



2. Comparing modern technologies, STD vs. ECO

HVAC is essential in almost all settings to ensure a comfortable and safe working environment. In Australia, 70% of energy usage and 63% of greenhouse gas emissions are estimated to be attributed to HVAC. Now your choice and decision is just more than just dollars.

Significant energy savings from the system design and equipment selections now play a huge part when constructing new structures.

There are many technologies available in modern air conditioning systems and getting that balance between capital and running costs can be attributed to:

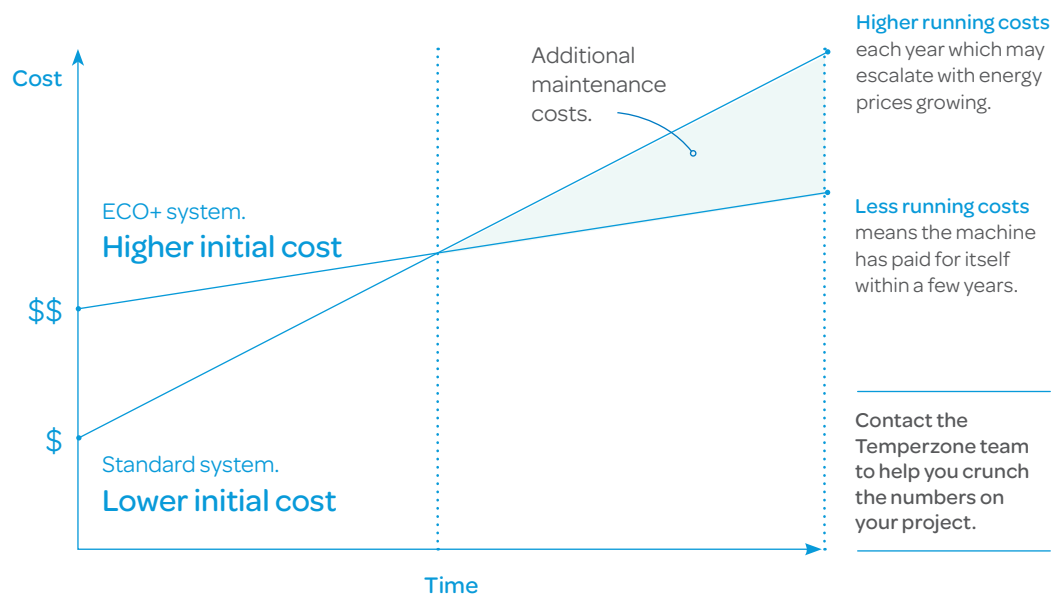
- Budget
- Owner occupier
- Who's paying for the energy bills
- Application
- Location
- Lifecycle expectancy

It's all about the control of the modern technologies:

- Key components
 - i. EEV
 - ii. EC Indoor fan
 - iii. Controls
 - iv. Compressor Technology and control

Capital vs. Running Costs

By spending more money up front on a more energy efficient unit you will save on running costs and on going maintenance. As opposed to the standard one off purchase which looks good initially but can eat into your savings over time. Making an investment now can pay itself back within a few years.



While the base EER of the Temperzone ECO machine was only slightly higher than the standard and less expensive machines at nominal rated conditions, it is the ECO energy efficient options and their control that delivers the annual savings.

This graph shows when you have the technologies to be able to control the machine you can deliver, comfort, control and energy savings.

- An optimised and well controlled HVAC system not only increases human comfort levels but also productivity leading to financial and environmental payoffs.
- With the HVAC system typically accounting for 40-50% of energy costs, it's an important decision to select the right type of system technology for your application.
- With every 1°C temperature rise in winter, it can increase the energy usage by 15%. It's important not to forget about your heating performance and efficiency.
- Every 1°C temperature decrease in summer can increase the energy usage by 10%. This just only further highlights how important what system technology you select can impact on the total project over its lifecycle.

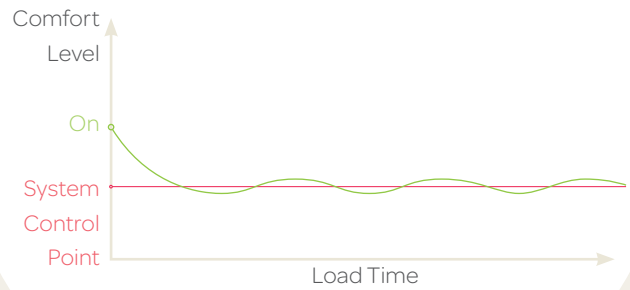
The Temperzone ECO design is considered one of the most energy efficient and controllable products available in Australia. With digital compressor technology, EEV, EC fan technologies and economy cycle all being controlled and monitored by the Temperzone unit controller (UC), makes the ECO energy optimised for both heating and cooling.

The unit controller, exclusively designed and optimised by Temperzone is the key to your systems energy efficiency. It's responsible for control, balance, safety and the optimum plant efficiency, continually monitoring and adjusting system performance, with changing outdoor temperatures.

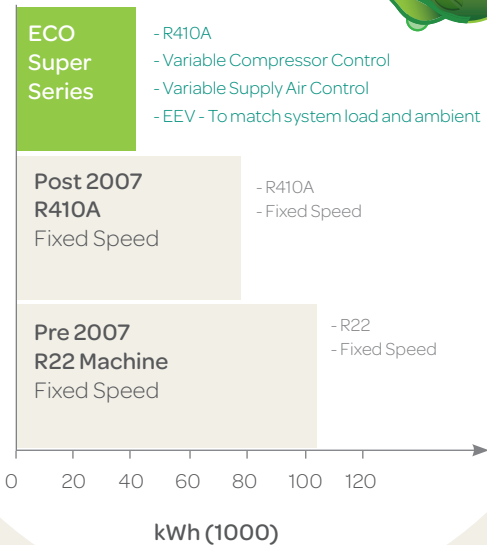
The decision and choice is now yours. Standard or an ECO machine. You choose the level of controllability and efficiency you want, or what your client expects.



Temperzone controllability allows close and varying supply air control to match your load giving your space superior comfort.



Discover up to 50% Annual Energy Savings with ECO Super Series



Based on:
 - Capacity 165kW
 - 8am to 9pm 365 days operation
 - Occupancy variable to simultaneous peak 50 people
 - ACADS Beaver 7.11.0