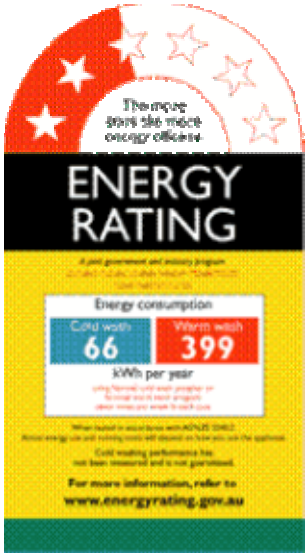
Save money and help the environment using the Energy Rating labels

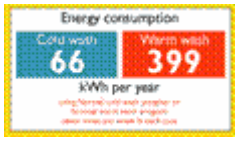


Whiteware appliances (washing machines, dryers, fridges & freezers, and dishwashers) as well as heat pumps have energy rating labels.

You can use these labels to work out running costs. These costs can help you compare different models in a product category (eg washing machines).

Whiteware appliances

Understanding the numbers



The number in the box on an energy rating label is the amount of energy (in kWh) a whiteware applicance uses over a year (based on the typical usage, below). You can use these numbers to work out how much an appliance costs to run.

Whiteware appliance	Usage Based on how much a typical family uses the appliance
Washing machine	Once a day Normal wash (either cold or warm wash), 365 days a year
Dishwasher	Once a day 365 days a year
Fridge	All day, every day 365 days a year
Dryer	Once a week (52 weeks a year)

Working out how much whiteware costs to run: an example

Using the energy rating label above as an example, you can work out how much this particular washing machine costs to run:

66	**x**	**$0.19**	**= $12.54**
Energy (kWh) (Cold wash)		Price per unit of electricity	Cost to run this washing machine per year (cold washes)

So, using the cold wash cycle, our washing machine costs us $12.54 a year.

If you want, you can then work out how much this washing machine typically costs to run over its lifetime (about 10 years for washing machines):

$12.54	**x**	**10**	**= $125.40**
Typical running cost per year		Typical lifetime (in years) of a washing machine	Cost to run this machine over its lifetime

Heat pumps

Heat pumps work by taking air from the outside and then pumping it into a room as either cool or hot air.

Understanding the numbers

The numbers in the boxes are amount of energy (in kWh) a heat pump uses.

Because some people use their heat pumps all day and others for only a few hours a day, the energy consumption is shown per hour (rather than per year).

You can use these numbers to work out how much a heat pump costs to run, and to compare models.

The bigger the difference between the input and output numbers, the more energy efficient the heat pump is.

Capacity output	The amount of cooling or heating energy created (kW per hour)
Power input	The amount of electricity the product uses (kW per hour) to produce the cool or hot air

Working out how much a heat pump costs to run: an example

Using the energy rating label above as an example, you can work out how much this particular heat pump costs to run.

❶ First, estimate how many hours a day you use a heat pump and then work out your approximate annual usage:

8	**x**	**182.5 days**	**= 1460**
Hours a day		6 months of the year (autumn, winter, spring)	Hours per year

❷ Now, work out how much electricity the heat pump uses a year:

1460	**x**	**1.64**	**= 2394.4**
Hours per year		Power input (heating)	Electricity (kWh) used per year

❸ Next, how much it costs to run per year:

2394.4	**x**	**$0.19**	**= $454.90**
Electricity (kWh) used per year		Cost per unit of electricity	Cost per year

So, our heat pump – which we've estimated we use for six months of the year, 8 hours a day – costs $454.90 a year to run.

You can go one step further and work out how much it costs over its lifetime:

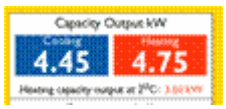
$454.90	**x**	**12**	**= $5458.80**
Running cost per year		Typical lifetime (in years) of a heat pump	Cost to run this heat pump over its lifetime

You can use this figure to compare models. An Energy Star heat pump can save you between $1000-2000 over its lifetime over a non-Energy star model.

Buying the right capacity heat pump

Another important consideration when buying a heat pump is whether you are trying to heat a single room or your whole house. You can use the online calculator on the Consumer website (http://www.energystar.govt.nz/products/heatpumpcalc.aspx) to help you work out what rated capacity heat pump you need.

If you live in the South Island….



And to help you more accurately calculate the energy consumption and cost in colder areas, such as the South Island, you may notice another heating capacity output number below the Capacity Output boxes ("Heating capacity output at 2°C").

You will usually need a heat pump with a greater output capacity in areas where the average temperature is lower during the cooler months.

Getting technical: working out the EER and COP

You can use the power input amounts to calculate the Energy Efficiency Ratio (EER) and the Coefficient of Performance (COP).

	Energy Efficiency Ratio (EER)	The ratio between the **cooling** input and output. For example, 4.45 divided by 1.61 = 2.76.
	Coefficient of Performance (COP)	The ratio between the **heating** input and output. For example, 4.75 divided by 1.64 = 2.90.

The higher the ratio, the more energy efficient the heat pump. Only the most energy efficient models are awarded the Energy Star mark.