



HOME ENERGY AUDIT TOOLKIT RECORD BOOKLET



RECORD BOOKLET

Use this booklet to record the measurements you made using the tools in the Home Energy Audit Toolkit and keep for future reference.

Complete the following information from your power bill

Date
Power cost per unit (c/kWh)
Daily charge
Amount of latest electricity bill (\$)
Amount of latest electricity bill (kWh)

Keeping the heat in



Use the thermometer to measure temperatures in different rooms over the course of a day and night.

Room	Date	Temperature		Date	Temperature	
		Min	Max		Min	Max
Living room						
Bedroom 1						
Bedroom 2						
Bedroom 3						
Bedroom 4						
Other						



Use the infrared thermometer to detect hot or cold spots on walls, ceilings, floors, fridges and window seals. This helps to identify areas of poor insulation or air leaks.

Note the location of any cold spots that could indicate leaks or poor insulation

	Ceiling	Floor	Walls	Windows	Doors
Living room					
Kitchen					
Bedroom 1					
Bedroom 2					
Bedroom 3					
Bedroom 4					
Bathroom 1					
Bathroom 2					
Other					
Other					

If the checks you've done show there's room for improvement, you can take the following steps to warm up your home.

- Upgrade/install effective insulation. Insulation will make it easier and more affordable to heat your home to a comfortable temperature. Ceiling and underfloor insulation can reduce heat loss by up to 50%. Ceilings should have two layers of insulation. If needed, wall insulation is best retrofitted during renovations.
- If you have recessed lights and found cold temperatures around the fittings, it may be because you have an older style of light and insulation around it would cause a fire risk. Ideally change to an LED light fitting that can have insulation added over the top.
- Block draughts. Make sure your windows and doors fit their frames. Use draught stopping tape around windows and doors and draught excluders or door snakes along the bottom of doors. Check hinges and locks, sometimes they need to be moved or replaced to make sure the window is fitting snugly.
- Open curtains (including nets) fully during the day to take advantage of free heat from the sun. Shut curtains at dusk to retain heat. If you don't have them, consider installing lined curtains/blinds.
- Windows lose more heat than any other part of a building so consider acrylic secondary glazing, DIY window-film kits (for timber frame windows only, from hardware stores) and even bubble wrap (dampen the glass with water then the bubble wrap will stick on the window). These can cut heat loss through windows by half and are a fraction of the cost of double glazing.

If you have questions or want more information, contact the DCC eco design advisor or visit *www.genless.govt.nz*

Heating



Checking the moisture level of firewood

Use the moisture meter to check how dry your firewood is. If the wood is too damp the fire will produce less heat and more smoke.

Notes on your measurements:

Keep your home dry

23.0° 42[%]

Use the thermometer to measure relative humidity (moisture levels) in different rooms over 24 hours.

Room	Date	Relative humidity		Date Relative h		umidity
		Min	Max		Min	Max
Living room						
Bedroom 1						
Bedroom 2						
Bedroom 3						
Bedroom 4						
Kitchen						
Bathroom 1						
Bathroom 2						
Other						
Other						

What do the measurements mean?

In Dunedin indoor relative humidity levels of 40 - 60% are ideal.

If your relative humidity levels are high you can try some of the following:

- Ventilate try opening windows on opposite sides of the room/house to allow a breeze
 to blow through and watch the relative humidity drop on the hygrometer. This should
 be done once or twice a day for at least five minutes and up to half an hour. Check the
 humidity while doing this if it's high, you can see it drop by 10% in only a few minutes.
 Leaving your windows/doors open longer in winter means all the heat stored inside will
 be lost and your house will be hard to heat up again.
- Remove moisture at the source. Install a damp-proof membrane/ground sheet on the ground under your house. Even when the ground seems dry, up to 40L of moisture can come up from the ground each day under a 100m² house. These can be installed for free as part of the Warmer Kiwi Homes scheme. Check the website to see if you qualify *www.energywise.govt.nz/warmer-kiwi-homes-tool*. If not, you can contact an insulation installer for a quote or for guidance on installing it yourself visit *www.ecodesignadvisor.org.nz*.
- If you don't have one, install and use a bathroom extractor fan and a rangehood in the kitchen. Make sure they are vented to the outside (rather than the ceiling). Ideally open your windows a little bit when using the extractor fan to improve its effectiveness.
- Avoid drying washing inside. A load of washing will release 3-5 litres of water. At least partly dry washing outside before finishing inside if needed.
- Wipe condensation off windows and dry the cloth outside. This will also let more sunshine in, helping to heat the house.

For more information visit *www.ecodesignadvisor.org.nz/resources, www.genless.govt.nz* or contact the DCC's Eco Design Advisor on 03 477 4000.

Save on hot water



	Time to fill a 10L bucket	Calculated flow rate L/m
Shower 1		
Shower 2		

Use the thermometer to test whether your hot water temperature is set correctly.

Ideally do this at the tap closest to the hot water cylinder. Run the hot tap on full until the temperature stabilises.

Water temperature: _____°C

Continuous flow gas systems deliver hot water between 38-55°C and this is not a problem.

What can I do to use hot water efficiently and save money?

- If the flow rate is about 9L a minute look at installing an inexpensive shower flow restrictor or new low flow shower head
- Another way to use less hot water is to cut down on baths, limit shower time to 5 minutes and use water for washing. For more information on saving on hot water go to *www.genless.govt.nz.*
- If the temperature at the tap is above 57°C. It is a good idea to adjust the thermostat on the electric hot water cylinder. It should be set to 60°C. If you do it yourself make sure you turn off the hot water cylinder first. If this doesn't help the thermostat may need to be replaced.
- You should insulate the as much as possible of the hot water pipe from the cylinder by putting lagging around the pipes.
- All electric hot water cylinders benefit from a cylinder insulation wrap.

Save on appliances



Use the power meter to measure electricity use by your appliances.

	Energy per use (kWh)	Cost per use	Approx. running cost per week*	Stand-by energy use (W) – Instant measurement
Fridge (per day)				
Freezer (per day)				
Heater (per day)				
Dishwasher (per cycle)				
Washing Machine (per cycle)				
Clothes dryer (per cycle)				
Heated towel rail (hour)				
TV				
Music system				
Computer				
Kettle/jug				
Microwave				

*To calculate the approx. running cost per week = Cost per use (from power meter) multiplied by the number of uses per week (e.g. times 7 days for appliances that are always on, or time number of loads, cycles or hours of use per week)

How can I save costs running household appliances?

- When replacing appliances choose the model with the most stars
- Turn appliances off at the wall when not in use. Use multi-plug power boards to easily turn individual devices off.
- Use timers and/or thermostats to manage energy use
- Only put as much water to boil in the kettle as you need
- Use the clothes line instead of the dryer
- Only use washing machine and dishwasher when full
- Retire old fridges and freezers
- Minimise the time you have the fridge/freezer door open
- Adjust fridge temperature to between 3°C and 5°C
- Adjust freezer temperature to between -15°C and -18°C
- Turn off lights when not needed
- Replace incandescent light bulbs with energy efficient LED bulbs
- Set up power management features on your computer and TV

Further advice

Homeowners, landlords and tenants in Dunedin can seek tailored advice from the DCC's Eco Design Advisor. The free service involves a consultation at people's properties, looking at each household's situation and offering a range of advice, including some no and lowcost options.

You can make an appointment at dunedin.govt.nz/eco-design-advice, by emailing ecodesign@dcc.govt.nz or calling 03 477 4000.

Online resources

The Eco design advisor website: www.ecodesignadvisor.org.nz

Assess your home using the free HomeFit Online Check: www.homefit.org.nz

Visit the government's energy efficiency website: www.genless.govt.nz

