
**Dean Weinman installed a geothermal heating unit when he built his home six months ago. His home remains at a constant 22 degrees year round. He can operate it from his iPhone, regardless of his location.**
PICTURES: JAIME MURCIA

# Earth power

## All the energy we need is just below the surface, reports **Renee Barnes.**

STAYING warm during the cooler months doesn't have to mean soaring utility bills and forsaking the environment. Australia's heating market is rapidly embracing sophisticated technologies to keep houses warm while minimising greenhouse gas emissions.

Geothermal heating, which has long been an effective sustainable heating method in the northern hemisphere, is gaining in popularity here.

Geothermal is emission-free energy that is extracted from the Earth's natural, stored heat. Proponents of the technology say Australia is particularly suited to this method of energy as it has the hottest rocks closest to the surface outside of volcanic areas.

Melbourne-based company Direct Energy installs geothermal heat pumps that tap into natural underground heat to power heating and hot-water services. The system also comes with a cooling component.

Direct Energy scientific and policy director Donald Payne says

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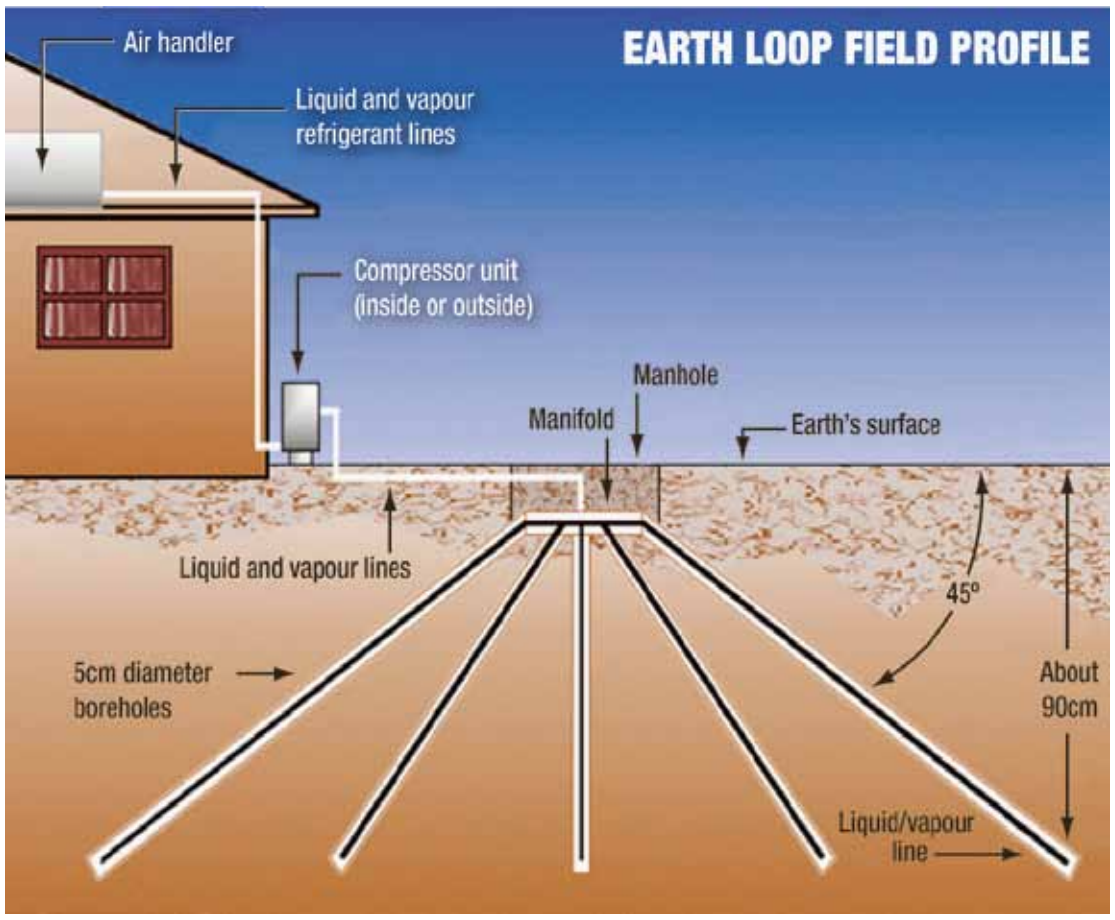



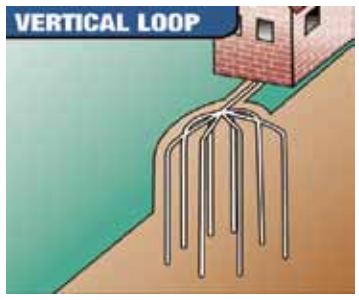


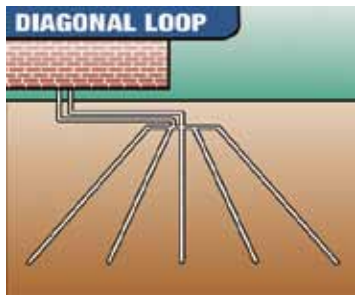


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temperatures below about three metres underground around the world are a fairly constant (12-18), regardless of the outdoor temperature. By using geothermal heat to equalise a building's temperature with that of the ground, less fossil-fuel energy is required to bring the temperature up — or down — to comfortable levels, resulting in energy savings of up to 75 per cent.

"In Victoria, heating, cooling and hot-water heating represent around 80 per cent of the average household's energy requirements, so geothermal heat pumps can have a substantial impact on overall energy consumption," Dr Payne says.

Dean Weinman installed a geothermal heating unit when he built his home six months ago and says his home remains at a constant 22 degrees year round. "I took the view that I was building this house for the next 20 years so I wanted to future-proof it in a way," he says.

"The technology is good for the environment and it not only adds intrinsic value to my home, but provides immediate savings in my energy bills. My electricity bill is now around $100 when it was $500."

He expects that with similar average savings the unit will pay for itself within seven years.

Mr Weinman uses his geothermal heating system to heat water and operate a ducted, under-floor heating and cooling system in his 50 square North Caulfield home.

"The temperature is constantly stabilised and people immediately notice there is no noise, there's no heat blowing on your face — the temperature is just comfortable," he adds.

The Australian Geothermal Energy Association (AGEA) estimates that there are about $1.5 billion worth of geothermal works programs underway in Victoria. But geothermal heating pumps are not included currently in government rebate programs and remain expensive.

Dr Payne says installing a geothermal heating system adds an additional $15,000 to the cost of installing a conventional reverse-cycle heating and cooling system. This cost is the result of drilling and installing of ground loops needed for the system.

Dr Payne says the current cost of geothermal heating pumps is equivalent to what early adopters of solar panels had in the 1990s. "Incentives, like for solar ... would reduce this additional $15,000 burden down to say $7000 if it amounted to an $8000 incentive [similar to that which is available for solar]."

Within the current carbon tax debate, Dr Payne says the Australian Geothermal Energy Association (AGEA) is lobbying state and federal governments for geothermal pumps to be included in the incentive schemes.

He adds: "The carbon tax debate brings attention to all renewable and energy-efficiency technologies including geothermal heat pumps ... [and we've found] the reception from government departments is heightened by the debate."

**MORE INFORMATION**

- **Direct Energy, 8598 0686 directenergy.com.au**
- **Origin Energy, 13 GREEN originenergy.com.au**

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## A SIMPLE SOLUTION

One way to slash heating bills is to play it smart when warming your home.

Origin retail energy adviser Anne Armansin says Australians spend far more on heating their houses than they do on cooling them. "There are simple actions people can take to reduce energy consumption, save money on bills and reduce their home's greenhouse gas emissions," she says.

Ms Armansin suggests simple solutions such as blocking draughty gaps around windows and doors; opening blinds during sunny winter days to allow the sun to heat the inside of the house; and putting rugs on tiled or wood floors to help keep the heat in.

For answers on home energy queries, email: homeenergyinfo@originenergy.com.au

## FIVE STEPS TO CUT THE HEATING BILL

1. Set temperatures wisely. Thermostats and heaters should be set at a maximum 8 degrees higher than the outside temperature. Each degree higher means higher energy consumption and can increase your energy bill by up to 10 per cent.

2. Check portable heaters. If you are using a portable heater, ensure it is well ventilated and clear of obstruction, and always turn it off when you aren't using it. Portables consume up to 2.4 kilowatts per hour. One heater can add hundreds of dollars to a winter electricity bill.

3. Use what you have. If you have ceiling fans, reverse the blade rotation direction to force warm air away from the ceiling and back down to you.

4. Shut the doors. Keep all doors to unused areas closed (unless your heating or cooling system requires doors or windows to be opened).

5. Smaller is not always better. Smaller appliances do not necessarily use less energy, so check the input wattage listed on your unit or instruction booklet.