

Emma and Bruce's steps to a zero carbon home:

North Coburg residents Emma and Bruce bought their home in 2006 and since then have done a green makeover of their home turning it into a comfortable, affordable and sustainable place to live.

The family made these changes over a period of two years, many of which were simple and low cost and using second hand/recycled materials.

By making these changes the household has managed to significantly reduce their carbon footprint and is moving closer towards their target of zero net emissions. Their electricity use is now down to three kilowatt-hours a day and their gas down to around four mega-joules a day. You can find out your own usage from your bills.

"I really love having a comfortable home, and it's finding how to do that in a sustainable way," says Emma.



The first thing Emma and Bruce did was sign up to 100% GreenPower through Community Power. (Average annual household reduction in greenhouse gas emissions: 8,305 kg CO₂-e)¹



To make the house even snuggier Emma used about 40 tubs of sealant along with weather stripping to seal up all the cracks and gaps in the house... (240 kg CO₂-e)



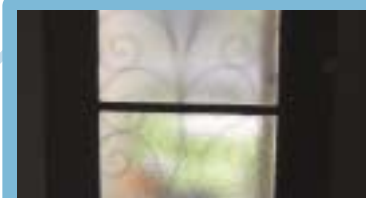
Emma and Bruce's home when they first



They then changed all the lights to energy efficient compact fluorescents. (140 kg CO₂-e)¹



and a Draft Stoppa to cover their exhaust pipes. "If you love having a cosy home insulate and seal gaps"



She also used Clear Comfort, a clear film which can be taped across windows as a cheap alternative to double glazing.



And put in a water saving showerhead (1,360 kg CO₂-e)



30% of heat loss can occur through windows and Emma made thick curtains and blinds and installed pelmets on all their windows to help keep the heat in. (160 kg CO₂-e)



Next came sub-floor insulation. Emma and Bruce used reflective concertina foil to go under their floor boards and also put reflective foil along the base board around the house. When they were installing a new window they used the opportunity to put in wall insulation to the surrounding walls. (180 kg CO₂-e)



To reduce the need for greenhouse intensive heating during winter, they installed R3.5 polyester batts in the ceiling and immediately went down from three doonas to two on a cold winter's night. (2,090 kg CO₂-e)

¹Average yearly CO₂-e savings for a household from implementing these measures. Sources for figures: Australian Greenhouse Calculator; Sustainability Victoria, You have the Power. Save Energy brochure; Australian Greenhouse Office, Cool communities: An introduction to the program, Abatement Actions and Measures.



Emma and Bruce are also aiming to reduce their emissions from transport by using their car as little as possible. Bruce rides an electric bike to work and uses this instead of a car to get around while at work. Emma and baby Annie use public transport or a bike and bike trailer!



To help shade the house and keep it cool they fitted shade sails over a new pergola and planted trees and vines. Planting the trees on raised garden beds has helped to increase their height.



To reduce food miles they are growing as much of their own vegies as they can. Water tanks and a grey water system are making it possible to keep the garden alive over summer.



bought it in 2006.



By using energy-efficient appliances and turning appliances off at the power point when not in use, they have managed to get their electricity right down. Using a powerboard/ powermate has helped make it easier to turn off standby power. (390 kg CO₂-e)



Midway through their second year the household installed a solar hot water system and noticed that their gas bill dropped to half of what it was the same time last year. (1,642 kg CO₂-e)



To reduce the amount of waste going into landfill (which when it breaks down causes methane, another harmful greenhouse gas), Emma and Bruce use chickens, composting and a worm farm to process all of their food scraps on site.



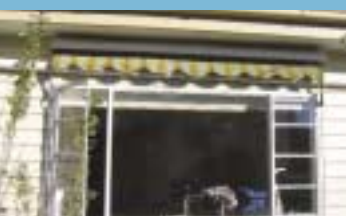
Insulating the hot water pipes with lagging has helped keep water hot in the pipes for longer and reduced the need to heat more hot water.



A heat shifter has made it possible to transfer warm air from one room to another.



When summer came the house started heating up. Emma and Bruce installed ceiling fans instead of air-conditioning.



and put up external blinds on their west and north facing windows. (66 kg CO₂-e)

Offsetting remaining emissions
After two years the household is getting closer to zero carbon emissions. To compensate for the emissions that they are still creating, Emma has decided to put money into reducing emissions elsewhere. Instead of going through an official offset provider such as Climate Positive or Greenfleet, Emma is working to reduce emissions locally. She contributed money to help her sister buy a solar hot water system, and has bought gap sealing products and light globes for her friends and neighbours.

What's next!
Over the next couple of years Emma and Bruce hope to reduce their energy bills even further and make their home even more sustainable. Plans include:

- Continuing to insulate walls as they do further renovations to the house
- Upgrading appliances to more energy efficient models
- Exploring options for double glazing or clear comfort on other windows
- Growing more vines over the pergola for shading in summer
- Installing a photo voltaic (solar power) system. They are currently talking to friends and neighbours about organising a bulk deal. Soon Bruce and Emma hope to be actually putting electricity back into the grid!

A big thank you to Emma for supplying pictures and information for this article.