

How many planets do we need?

If everyone on the planet lived like the average Australian we would need 4 planets to support everyone's lifestyle.

The Ecological Footprint calculates humanities demand on nature and communicates it tangibly in terms of hectares per person – giving an understanding of how much we have, how much we use, and how uses what¹.

In 2007, humanity used about 150% of the planets natural resource supply causing what is called, “ecological overshoot”. Put another way, in 2007 it took 1.5 years to regenerate the resources used by humanity². Much like running a deficit or bank overdraft, it can be manageable in the short-term but can cause trouble without a plan to get back into balance, or surplus. If we continue to use resources in the same way, by 2030 we will need 2 planets to support humanity³. In development terms, this is a key constraint on wellbeing.

Reduce your footprint by 25% by following our 10 point “savings plan”

Whilst the calculations are complicated, reducing your footprint by at least 25% isn't, if you follow our ten point “savings” plan. The Ecological footprint is all about choice. The concept of going without or having less is a confronting one to us today – why should you go without by doing your bit, when someone else



isn't? Understanding the implications of your decisions is essential to making a difference without big compromises.

If driving a 4WD is a necessary part of your life, that's OK – you can still do your bit to “save the planet” by making up for it somewhere else. The goal of this simple plan is to increase your awareness of the footprint consequence of your modern life and the areas where simple choices can make meaningful differences.

Figure 1 – Composition of average Australian Ecological Footprint by element

Footprint Savings Plan

Figure 1 shows the composition and scale of the average Australian ecological footprint⁴. The dark bar shows the average, and the light bar the savings opportunities identified in the plan. Half of the savings and a 15% reduction is available just with a focus on food and home energy efficiency. If you want to drive a

¹ Global Footprint Network, 2009

² WWF, Living Planet Report, 2010:34

³ Ibid:9

⁴ In Global Hectares per annum, in 2007

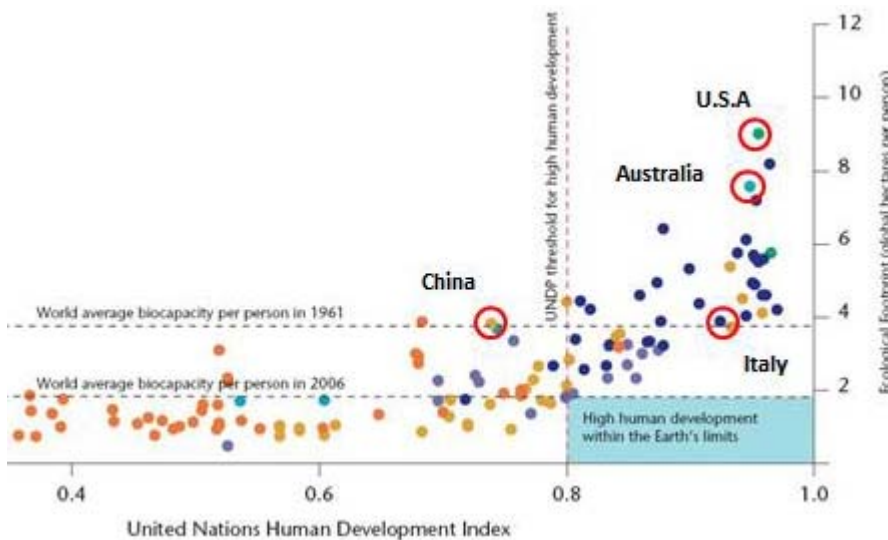
fast or big car, just offset your entire home energy with green-power offsets to make up for it. See the back page for the full opportunities list which shows a path to a 30% reduction.

The Top Ten Savings Tips

Savings Item	Element	% Saving
Choose an efficient car & avoid it 1 day a week	Mobility	-4%
Eat fish in place of meat once a week	Food	-4%
Save 10% of your income	Goods	-3%
Install instant gas hot water with a 9L showerhead	Building	-3%
Use cold water for clothes washing	Building	-2%
Halve the paper you use (papers, magazines, writing)	Goods	-2%
Halve your food packaging (and recycle everything)	Food	-2%
Half the food you throw out (or buy as you need it)	Food	-2%
Replace Halogens with LED's in all home lighting	Building	-1%
6 Star lightweight building & renovations	Building	-1%

Why do I care?

Figure 2⁵ shows the ecological footprint of nations charted against average supply (or bio-capacity). The size of challenge is seen when you consider that all the “dots” need to be in the bottom right hand “blue square”. Australian’s have the one of the highest per capita footprints of all nations owing in a significant way to our sprawling urban form and high carbon energy and transport systems.



Aspire to the Italian way of life which is 50% less than the average Australian

Figure 2 – The Ecological Footprint of Nations (Copyright GFN and UNDP)

⁵ Global Footprint Network, 2009; UNDP, Human Development Report, 2009

What makes up my Footprint?

The Figure 3 and Table 1 show the composition by proportion for the average Australian. There is evidence that shows that the wealthier the household, the higher the footprint⁶.

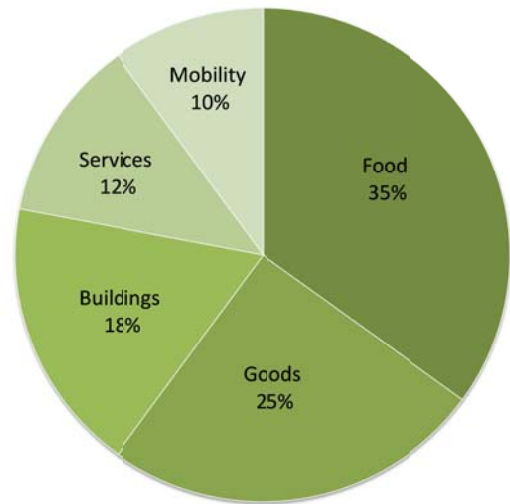


Figure 3 – Composition of average Ecological Footprint

Table 1 – Composition of Footprint Categories

Element	Coverage
Food	Animal, fish & plant foods
Buildings	Electricity, Gas, Firewood, New Buildings and renovations
Goods	General goods, papers, cleaning products, clothes and shoes, home furnishing, electronic goods
Services	Government, medical, financial, entertainment, water and sewer, waste and other
Mobility	Cars, air transport, rail services, bus, motorcycle

⁶ Consuming Australia, 2007

Food Footprint

Food makes up 35% of the average footprint and is comprised of meat, fish and plant foods. In general animal products in Australia have 4-5 times the impact per dollar spent than plant or fish products. Food consumption is closely related to waste owing to its high level of packaging and rate of disposal. Table 2 shows the approximate ecological footprint by dollar spend and by unit for a variety of common foods and beverages in Australia.

Driving the high footprint of food in Australia in order of impact is;

- The loss of ecologically valuable land through farming
- The energy inputs into processing and transporting food to point of sale
- The loss of native fauna and species in fisheries

Table 2 – Ecological Footprint of various foods in Australia⁷

Food Type	Footprint/ \$ (in m2)	Footprint / unit (m2)
1 kg beef from shop	31	1,231
1 kg fish from shop	2	70
1kg veggies from shop	6	44
2L milk or cheese block	6	38
1 bottle of wine	2	36
Can of soft drink	2	6

Over 8% of your footprint is associated with the food waste – that is, the food you buy and throw away!

Every dollar you spend purchasing food has a direct impact and meat has a particularly high impact because it takes three times as much land to raise livestock in Australia than in any other OECD country. New Zealand is recognised as having the lowest livestock ecological footprint (think, New Zealand lamb).

The Top Five Food Savings Initiatives

Initiative	Footprint Saved GHa/pa	% Reduction
Go vegetarian just one day per week <i>Your mum was right, eating veggies is good for you, and the planet too.</i>	0.3	-11%
Swap meat for a fish once a week <i>Apart from its footprint, about 2,500 litres of water are needed to deliver a 200g steak to your plate.</i>	0.2	-8%
Reduce food packaging by half <i>Australians generate 90kgs of packaging a year, half of which ends up in landfill or litter. Buy food without packaging, take your own packaging, recycle any packaging you end up with (in the YELLOW bin!). Managing to halve your food packaging is a 5% saving.</i>	0.13	-5%
Halve your food waste <i>Incredibly, we throw out 8% of all the food we purchase. Imagine the savings to your household budget – not to mention halving that throw out rate can reduce your footprint by 4%.</i>	0.1	-4%
Drink tap water in place of bottle drinks <i>In 2005, the per capita consumption of bottle drinks was 120L (about 1 can per day). Halving the number of cans can reduce your footprint by 4%. Each can uses 260 l of water to produce, think of the water savings as well.</i>	0.1	-4%

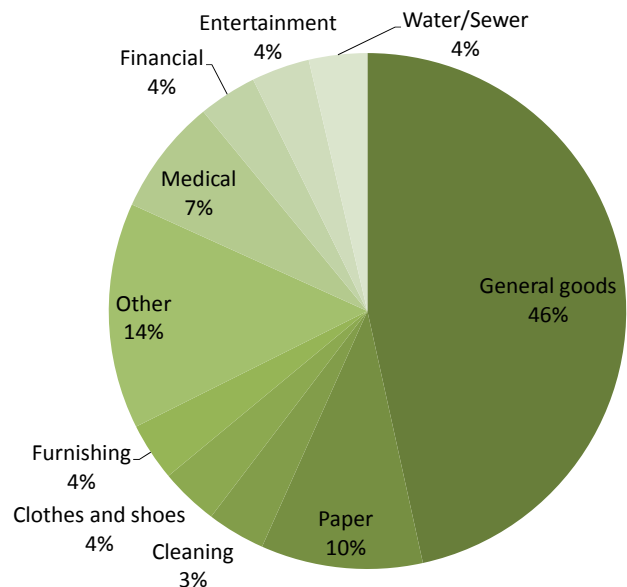
⁷ Balancing Act, Vol 2, 2005; Global Footprint Network, 2009; Consuming Australia, 2007

Goods and Services Footprint

Goods and services account for 37% of the average footprint – tackling this component is challenging as the notion of having the freedom to consume with growing wealth is at the core of our feeling of wellbeing and prosperity.

The chart shows the major components and paper shows up a surprisingly large element at 10%. The rise of e-journals and books could see this component of our footprint naturally reduce over time. But, it is worth thinking about the impact every time you read the paper or purchase a magazine. The ecological footprint of a page of a broadsheet paper is the physical size of that paper.

The old saying “reduce, reuse, recycle” is really relevant to your goods footprint. Is there a way to share large household items with a group of neighbours (e.g. lawn mowers or vacuum cleaners)? Would you consider revamping second hand furniture (or antiques) instead of new furniture? Can you take a few extra minutes to consider goods made from recycled content materials and no packaging?

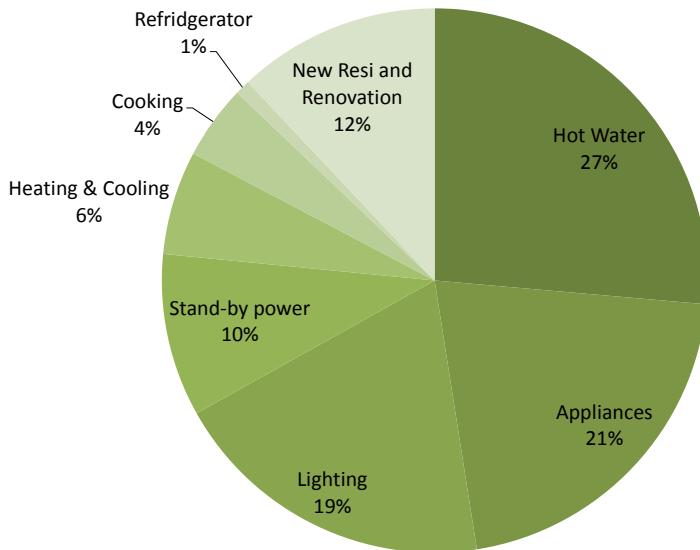


The Top Goods and Services Savings Initiatives

Initiative	Footprint Saved GHa/pa	% Reduction
Save 10% of your income <i>Saving is good for your future and the planet!</i>	0.2	-2%
Halve the paper you consume <i>Reflect on your paper consumption and challenge yourself to find ways to halve it and recycle the rest. Consider paper, magazines, cardboard packaging, books, printer paper.</i>	0.14	-2%
Seek out quality pre-loved furniture <i>Consider the big purchases of furniture and seek alternatives such as quality pre-loved or re-furnished furniture. Ask suppliers and retailers about the recycled content of the furniture you are looking to purchase.</i>	0.05	-1%
Seek out non-chemical cleaning products <i>The challenge is convenience – look for alternatives to chemical cleaners and see if you can make them go further by using them according to manufacturer’s recommendations.</i>	0.05	-1%
Halve your water consumption <i>Water consumption has a footprint through the energy to deliver it to you and to manage sewerage. Halving your water consumption can make a difference.</i>	0.05	-1%

Building Footprint

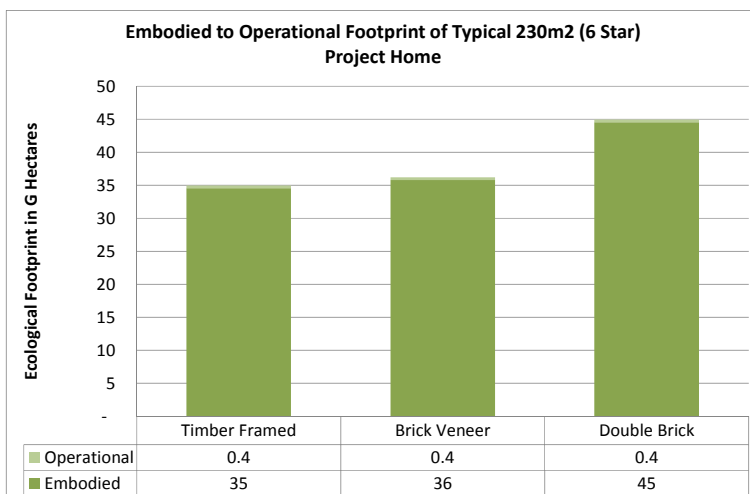
The building footprint is made up of energy consumption (85%) and new buildings and renovations (15%). The chart shows the operating energy footprint by end-use and chart y, the footprint per meter square of a typical 230m² project home as compared to its operating energy consumption (for an average 6 Star rated home).



The major drivers of home energy footprint are hot water, appliances, lighting and stand-by power. As ownership of home electrical appliances and in particular computers and audio visual equipment, has grown so too has the element of stand-by power. Substantially reducing stand-by power is only possible by turning appliances off at the wall – the use of a power board can make this habit a little easier to get into by having groups of appliances connected in groups with one switch off point.

Purchasing the most efficient (highest star rated) appliance as possible is important to be able to reduce your appliance footprint. Lighting is more challenging as many of us now have a sea of halogen lights which are relatively expensive to change to high efficient compact fluorescent or LED alternatives. Thankfully LED replacement technology is advancing rapidly and certainly worth considering as over their life cycle, they are half the total cost of a halogen equivalent. Motion sensors are also an important initiative for easy savings when lights are not needed.

By combining a 9 litre showerhead with a solar boosted gas hot water system you can halve your hot water footprint. A gas instant system with an electronic pilot light is the next best option.



For new construction or major renovations it is worth considering these key operational efficiency points. However, it is important consider the absolute impact of new buildings in context to operating energy. A focus on the whole dwelling including operating energy efficiency is essential as is demonstrated in chart y. Lightweight construction has a lower footprint than heavy weight construction and spending lots of time on operating energy should be balance with a focus on efficient building design, lower footprint

materials and looking for materials with a recycled content.

The Top Building Savings Initiatives

Initiative	Footprint Saved GHa/pa	% Reduction
<p>Solar boosted gas hot water and 9 litre showerhead</p> <p><i>Doing these two things can reduce your building footprint by 0.18 Ha per annum – just be sure you don't take longer showers!</i></p>	0.18	-2%
<p>Use cold water for clothes washing</p> <p><i>Washing your clothes in cold water can make a big difference. Today, detergents are available to work in cold water and most washing machines allow this as an option.</i></p>	0.15	-2%
<p>Eliminate standby power</p> <p><i>Sometimes called "intrusive" or "phantom" power – this is the power used by all those pesky LED and glowing lights on appliances. The only way to eliminate them is to turn appliances off at the wall (or pull the plug out of the wall). For appliances that can be fully switched off – use a power board in banks to make the job quick and easy. In new building, consider a special circuit for these appliances on a timer.</i></p>	0.07	-1%
<p>6 Star low footprint renovation or new construction</p> <p><i>Build a new home with lightweight, low footprint materials and a 6 star heating and cooling rating.</i></p>	0.09	-1%
<p>Replace halogens with LED's</p> <p><i>In the old days, our rooms would have a single 60 or 100 watt incandescent light fitting. Today, our love for LV Halogen lighting has seen the average room lighting increase to over 250 watts with four 50 watt halogens (and ballast loss). As little as five years ago energy efficient alternatives were scarce, today there are many compact fluorescent and LED options to choose from, many of which are cheaper over their life cycle than Halogen.</i></p>	0.1	-1%

Mobility Footprint

The mobility footprint is the smallest element of the total footprint at 10%. For GPT employees however, this element varies from 35% to as low as 6% of the total footprint. In Australia the car is the greatest driver of the transport impact through sheer numbers.

The most recent statistics for Australia suggests that the average household has 1.3 cars which generate a footprint of 0.001 Ha (or 100m²) per kilometre travelled on average.

The table shows the ecological footprint of various modes of travel per kilometre travelled (a single person).

Travel Mode	m ² / km
Car as driver	0.81
Taxi (car as passenger)	0.41
Ferry	0.24
Train	0.12
Tram	0.06
Plane	0.03
Bicycle	0.02