



SECON

ENVIRONMENT INFORMATION

BRIEF



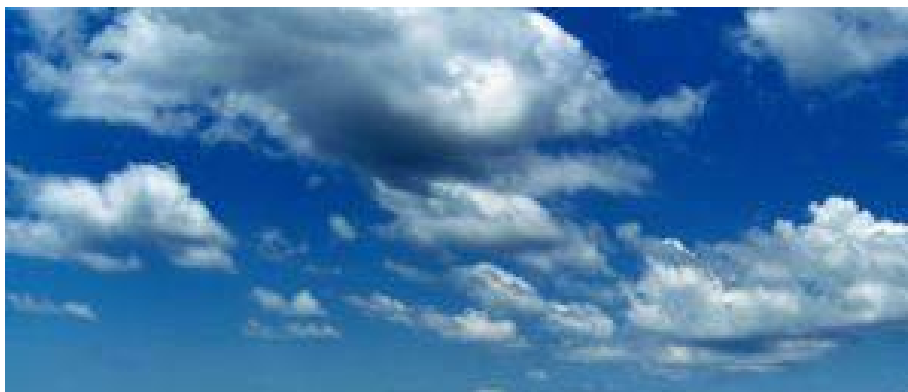
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ENVIRONMENT INFORMATION BRIEF **OVERVIEW**

This Environment Information Brief is designed to hopefully give everyone a better understanding of the proposed upcoming legislative changes in regards to emission trading & taxing schemes that are designed to reduce carbon discharges and protect the longevity of our environment.

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GLOSSARY OF TERMS

Carbon Credits are part of a tradable permit scheme. They provide a way to reduce greenhouse gas emissions by giving them a monetary value. A credit gives the owner the right to emit one ton of carbon dioxide.

Carbon dioxide is a chemical compound composed of one carbon and two oxygen atoms. It is often referred to by its formula CO₂. It is present in the Earth's atmosphere at a low concentration and acts as a greenhouse gas. In its solid state, it is called dry ice.

Carbon footprint is the measure of the amount of carbon dioxide or CO₂ emitted through the combustion of fossil fuels in carrying out a process or making of a product. The footprint is expressed in "CO₂ equivalent units" and the carbon footprint for a typical person is around 10 tons of CO₂ *per year* – eg: home energy use and personal transport.

Carbon Neutral is the potential for net carbon emissions to be zero by offsetting CO₂ gains against activities that create negative CO₂ gains. This definition differs from 'zero carbon'

Carbon offset is the act of reducing or avoiding GHG emissions in one place in order to "offset" GHG emissions occurring elsewhere. Because GHG's mix well in the atmosphere, it doesn't matter where that mitigation occurs.

Climate Change originally meant changes in climate over a period of time, although now it has come to mean the changes in climate, in particular temperature and rain, over the last few decades, and widely considered to be due to changes in industrial processes. (*Also called "Global Warming" see below*)

Emissions are releases of gases to the atmosphere, caused by human behaviour. In the context of global climate change, they consist of greenhouse gases.

Direct Emissions refer to those released from activities occurring under our immediate control eg at Secon.

Indirect Emissions refer to those created elsewhere in order for activities to occur – eg: fires in Malaysia to make way for palm oil that is then imported for biofuel.

Global warming is the observed increase in the average temperature of the Earth's atmosphere and oceans in recent decades, and its projected continuation caused by human emissions of greenhouse gases.

GHGs or Greenhouse gases are components of the atmosphere that contribute to the greenhouse effect. Some greenhouse gases occur naturally in the atmosphere, while others result from human activities. Naturally occurring greenhouse gases include water vapor, carbon dioxide, methane, nitrous oxide, and ozone. Certain human activities, however, add to the levels of most of these naturally occurring gases.

Kyoto Protocol is the internationally binding agreement under the UN Framework Convention on Climate Change that set GHG targets for signatories to abide by. Drawn up in 1997 and came into effect in 2005, it requires developed countries to reduce emissions by 5 per cent, compared with 1990 levels, by 2012. It is administered by the secretariat of the UN Framework Convention on Climate Change. Australia did not join this until 2008.

Zero Carbon is any activity where absolute carbon emissions are zero.

GLOBAL WARMING

Global warming is the name given by scientists for the gradual increase in temperature of the Earth's surface that has worsened since the industrial revolution.

Over the past two decades the effect has become more marked. Considerable evidence exists that most of this warming has been caused by human activities... that's to say we have altered the chemical composition of the atmosphere through a buildup of greenhouse gases – primarily carbon dioxide, methane, and nitrous oxide.

What if we do nothing? Rising global temperatures will cause sea level to rise and alter local climate conditions, affecting forests, crop yields, and water supplies. It may also affect human health, animals, and many types of ecosystems. Deserts may expand and some of our countryside may be permanently altered.

What will happen in the future if we do nothing?

- Climate model simulations predict an increase in average surface air temperature of about 2.5°C by the year 2100.
- The likelihood of "killer" heat waves during the warm season will increase.
- It is estimated that sea-levels will rise by approximately 49 cm over the next 100 years.
- Sea-level rise will lead to increased coastal flooding through direct inundation and an increase in the base for storm surges, allowing flooding of larger areas and higher elevations.
- Further melting of the Arctic Ice Caps (at the current rate) will rapidly continue.

What can I do?

There are many ways you can help. Firstly, you need to recognise how you personally impact global warming. Your Carbon Footprint will show you how to minimise your impact and from this we can go about making the correct choices in the future.

WHAT IS A CARBON FOOTPRINT?

Carbon Footprint is a measure of the impact human activities have on the environment in terms of the amount of greenhouse gases produced, measured in units of carbon dioxide.

A Carbon Footprint is made up of the sum of two parts, the direct / primary footprint and the indirect / secondary footprint.

1. The **primary footprint** is a measure of our direct emissions of CO₂ from the burning of fossil fuels including domestic energy consumption and transportation (e.g. car and plane).

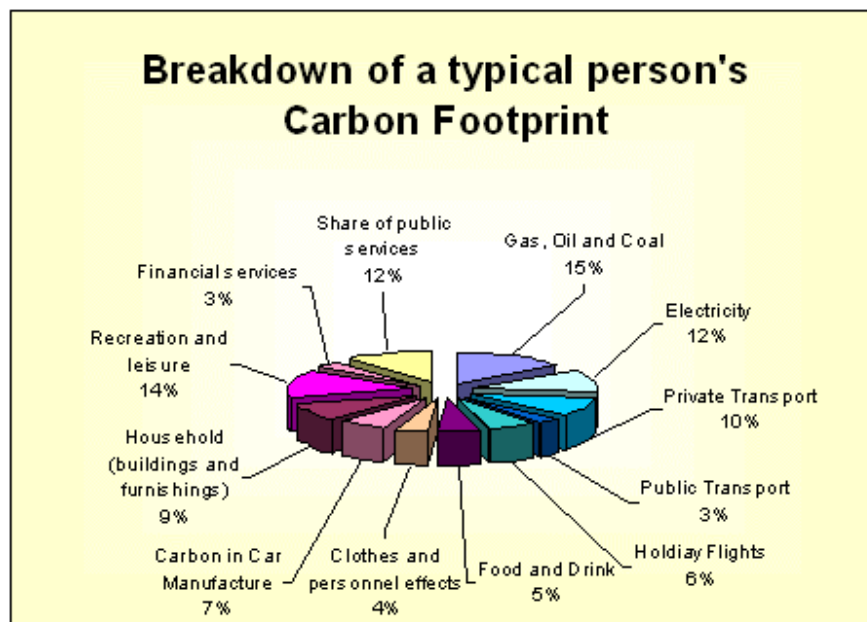
Our direct activities:

- Private transport
- Gas & electricity
- Home (buildings furnishings)
- Recreation & leisure
- Clothes and personal effects
- Financial services

2. The **secondary footprint** is a measure of the indirect CO₂ emissions from the whole lifecycle of products we use - those associated with their manufacture and eventual breakdown.

Our Indirect Activities:

- Manufacturing – inc ship emissions, factories overseas
- Public transport
- Food and drink
- Share of public services
- Holiday flights



The pie chart above shows the main elements that make up the total of an average person's carbon footprint. What is Secon's? This is what we need to find out.

REDUCING OUR CARBON FOOTPRINT

Today it is more important than ever before to minimise your footprint.

Not only are the developed western countries producing more and more carbon emissions, but there is a growing problem as the population in Africa and Asia start living improved lifestyles which consume more energy.

Did you know... Electricity is one of the biggest producers of carbon emissions, so every time you make a coffee or turn the television on you are adding to global warming.

Tips to Reduce Your Primary Footprint

1. Holidays - Don't go by air
2. Electricity - Sign up to renewable energy
3. Gas - Try using solar water heating - this can reduce your gas bill by up to 70% over a year.
4. Travelling around - Use public transport as much as possible. Find out about your local bus services and then use it.
5. Car Share - Sign up to a car share scheme to reduce your travel footprint.

Tips to Reduce Your Secondary Footprint

When you buy goods - consider where they have been made and the materials and processes used to make them. Items that have high emissions in the manufacture or delivery should be avoided when ever possible.

Things such as:-

1. Bottled water - Tap water is safe to drink in most of Australia, yet people still insist on buying bottled water. If the bottle is labelled as being from volcanic springs - you can bet that it has probably been imported from some distance. Imagine the carbon footprint of the flight / shipping of the water! And that's before adding in the emissions due to making the bottle and / or recycling it.
2. Food and drink from far distances - When you go to the supermarket, look at the label to identify which country the food is from.
 - Think twice about buying a bottle of wine from the other side of the world - you may be able to find much more local wine, which will have traveled far fewer miles.
 - Better still try growing your own fruit and vegetables in your own garden. Planting an apple tree will not only provide you with lots of fruit, with zero carbon footprint, but the tree itself will breathe in carbon dioxide from the atmosphere - making these fruit effectively carbon negative!
3. Meat eating - Reduce your consumption of meat, especially red meat.
4. Clothes from far off lands - Check the clothes labels before you buy. If they come from more than 1000 miles away, keep looking!
5. High packaged items - Avoid goods and services that have unnecessary packaging! Need we say more?

Here's a list of simple things you can do immediately at home

These will start to reduce your contribution to global warming. The items in this list will cost you no money at all and will in fact save you money.

- Sign up to a green energy supplier, who will supply electricity from renewable sources (e.g. wind and hydroelectric power) - this will reduce your carbon footprint contribution from electricity to zero
- Turn it off when not in use (lights, television, DVD player, Hi Fi, computer etc.)
- Turn down the central heating slightly (try just 1 to 2 degrees C)
- Turn down the water heating setting (just 2 degrees will make a significant saving)
- Check the central heating timer setting - remember there is no point heating the house after you have left for work
- Fill your dish washer and washing machine with a full load - this will save you water, electricity, and washing powder
- Fill the kettle with only as much water as you need
- Unplug your mobile phone as soon as it has finished charging
- Defrost your fridge/freezer regularly
- Do your weekly shopping in a single trip
- Hang out the washing to dry rather than tumble drying it
- Go for a run rather than drive to the gym

The following is a list of items that may take an initial investment

They should pay for themselves over the course of 1-4 years through savings on your energy bills.

- Fit energy saving light bulbs
- 35% of heat generated in the house is lost through the walls. Installing [cavity wall installation](#) to a medium size house could reduce your heating bills by up to \$100 per year
- By installing 180mm thick insulation in your ceiling you could stop about 25% of your heating escaping through the roof
- Recycle your grey water
- Replace your old fridge / freezer (if it is over 15 years old), with a new one with energy efficiency rating of "A"

What about Secon Carriers? What can we do?

1. Look at our trucks – carbon emissions
2. What alternatives to fuel trucks? – Gas, biofuels, Hybrids?
3. Buying Australian made goods and food.
4. Ordering our uniforms from Australian made source.
5. Look at our lighting in the offices – what bulbs are we using?
6. Look at our heat settings on our heaters
7. Look at recycling - paper, cardboard, toners, car oils, mobile phones anything else?
8. Look at printing on both sides of our paper.
9. Look at water tanks.
10. Look at planting some trees.

Can you add more to this list?.....

CARBON CREDITS – WHAT ARE THEY?

If countries or **organisations are able to** reduce their green house gases below their **set** emission quota **they are awarded Carbon Credits, which are, then in-turn able to be** traded internationally at their current market price.

This carbon credit system was ratified in conjunction with the Kyoto Protocol. Its goal is to stop the increase of carbon dioxide emissions.

For example, if an environmentalist group plants enough trees to reduce emissions by one ton, the group will be awarded a credit. If a steel producer has an emissions quota of 10 tons, but is expecting to produce 11 tons, it could purchase this carbon credit from the environmental group. The carbon credit system looks to reduce emissions by having countries honor their emission quotas and offer incentives for being below them.

Kyoto Protocol

The Kyoto Protocol is an international agreement linked to the United Nations Framework Convention on Climate Change. The major feature of the Kyoto Protocol is that it sets binding targets for 37 industrialized countries and the European community for reducing greenhouse gas (GHG) emissions. These amount to an average of five per cent against 1990 levels over the five-year period 2008 - 2012.

The **Kyoto Protocol** was adopted in Kyoto, Japan, on 11 December 1997 and entered into force on 16 February 2005. 180 nations have ratified the treaty to date.

On 3 December 2007, the Prime Minister signed the instrument of ratification of the Kyoto Protocol, and on 11 March 2008 Australia's ratification came into effect.

Australia has committed to meeting its Kyoto Protocol target, and has set a target to reduce greenhouse gas emissions by 60 per cent on 2000 levels by 2050. Australia will participate actively and constructively in the negotiations working towards a post 2012 agreement which is equitable and effective.



Delegates celebrated adoption of the Protocol in 1997.

What is Carbon-Offsetting ?

Each of our everyday actions consume energy and produce carbon dioxide emissions, e.g. driving our cars, heating or cooling our homes and offices. Carbon Offsets can be used to compensate for the emissions produced by funding an equivalent carbon dioxide saving somewhere else.

Such projects will prevent / have already prevented or removed an equivalent amount of carbon dioxide elsewhere in the World. As CO₂ emissions are distributed across the World, it does not matter whether you make the reduction in Melbourne or Mumbai – the positive effect on the environment will be the same.

Is offsetting the solution to climate change?

Climate change will only be addressed if each and every one of us takes responsible steps to **REDUCE** their CO₂ emissions. It is important to note though, in our industry avoidance of all CO₂ emissions will be almost impossible – in this case, Carbon Offsetting will play a vital role.

WHERE TO NOW?

The Australian Government is yet to commit to a Carbon taxing policy but there is no doubt this is coming and we should be ready.

Like Health and Safety, everybody needs to feel involved in this rather than feel imposed upon – we need to start thinking of and addressing our target areas now. Shortly we propose to set up an Environment Group that will meet regularly to investigate and formulate what targets we hope to achieve in the short, medium and long term.

So if interested please contact **Brenda Considine**

Remember Targets should be SMART

S*pecific*: People appreciate a clear target - not a muddy one.

M*easurable*: Use an indicator to measure progress.

A*greed*: People are more likely to participate if they agree with the target.

R*ealistic*: - but challenging. Take account of what can be achieved, rather than purely hopeful.

T*rackable*: track all that contributes to the target.

Please continue over-page for supplementary information

MORE INFORMATION OF INTEREST TO OUR INDUSTRY

BIOFUELS

We are running out of fossil fuels. Just how quickly is a matter of debate, economics and a lot of politics. Unfortunately, most of the oil now being consumed in the world is occurring on the other side of the world where there are the greatest reserves.

There is much talk about "reserves", and there is a strong market argument that the higher the price for oil, the more it is worth excavating shale (rock) and the like. But this ignores the increased difficulty in getting any oil in terms of energy/security, not to mention those who can't afford the higher prices.

How long will the oil last? We are not the only ones asking this question. However, we need to worry about what happens long before it runs out.

At first sight, biofuels seem to be the answer to our future energy needs. They are said to be "carbon neutral", as they absorb as much carbon dioxide when growing as they emit when being burnt. And the idea of using the sun to grow our energy seems to be the best way forward.

Biofuels take up land - and energy - the amount of fertiliser going in has to be factored into carbon counting. Of more concern is the land taken up. Apart from the threat to food production that this poses, there are some other major problems. Basically we haven't got room.

Also, for example, it is calculated that for every ton of palm oil 33 tons of carbon dioxide is emitted. About a third is lost from the draining peat bogs and the rest come from forests being burnt to make way for plantations - particularly Oil Palms. That is 10 X more CO₂ than petrol produces. There are 2 billion tons of CO₂ lost like this in Indonesia and Malaysia - equivalent to about 8 percent of the globe's fossil fuel emissions.

There are three main types of biofuel:

1. **Biodiesel** which can be used neat, but is generally used as a blend in conventional diesel. It can be produced from a number of sources, including recycled waste, vegetable oil and oil crops such as rapeseed and palm.
2. **Bioethanol** which can be blended into petrol and can be produced from a number of crops including sugar beet and wheat.
3. **Biogas** can be used instead of compressed natural gas to power gas vehicles.

At present, biofuel makes up 0.25% of overall road fuel sales.