

New Zealand Walking  
Conference  
More Feet on the Street

**Tom Morton**

**Demystifying Carbon Credits  
for the household – what does  
it mean?**

# Demystifying Carbon Credits

My aim is to

- Show what the carbon footprint of the average household is
- Provide answers for the attitude of WSIC – Why Should I Care
- Prove to you that it is easy to make changes by getting you to calculate your conference carbon footprint and buy offsets if you choose

# What is the “Carbon Footprint”?

## The academic approach

- "The carbon footprint is a measure of the exclusive total amount of carbon dioxide emissions that is directly and indirectly caused by an activity or is accumulated over the life stages of a product." Thomas Wiedmann and Jan Minx – 2008 - A Definition of 'Carbon Footprint'

Or from Google the following:

Definitions of **Carbon footprint** on the Web:

- A representation of the effect human activities have on the climate in terms of the total amount of greenhouse gases produced (measured in units ...  
[www.esd.rgs.org/glossarypopup.html](http://www.esd.rgs.org/glossarypopup.html)
- A measure of the amount of carbon dioxide emitted through the combustion of fossil fuels. A carbon footprint is often expressed as tons of carbon dioxide or tons of carbon emitted, usually on an annual basis.  
[www.freevisitors.com/](http://www.freevisitors.com/)
- This is a measure of the impact that someone's activities will have on the environment, measured in units of carbon dioxide produced. To reduce a carbon footprint is beneficial to the environment, which is why there are calculators to measure and reduce these footprints.  
[earth911.org/blog/2008/01/01/reduction-terms-glossary/](http://earth911.org/blog/2008/01/01/reduction-terms-glossary/)
- A carbon footprint is the measure of the environmental impact of a particular individual or organization's lifestyle or operation, measured in units of carbon dioxide. (WhatIs blog) (New Yorker) (CarbonFootprint.com)  
[whatis.techtarget.com/definition/0,,sid9\\_gci1310722\\_00.html](http://whatis.techtarget.com/definition/0,,sid9_gci1310722_00.html)
- The term "footprint" is frequently used incorrectly to describe a GHG Inventory. This term actually refers to the amount of productive land (forest) required to sequester (remove) the equivalent amount of GHGs that a company emits. ...  
[www.thepundit.com/pages/carbon-market-terminology-deci-003010.php](http://www.thepundit.com/pages/carbon-market-terminology-deci-003010.php)
- A measure in units of carbon dioxide of the amount of greenhouse gases we emit directly and indirectly through our daily actions.  
[msk.com/reactions/](http://msk.com/reactions/)
- carbon market globesity (noun the phenomenon of obesity in Western countries, seen as a worldwide health problem) - this term coined by the WHO I think dumpster diving (noun the salvaging of household food items from the stock which has been thrown away by a shop, supermarket, etc. .  
[wordpress.com/tag/macquarie-dictionary/feed/](http://wordpress.com/tag/macquarie-dictionary/feed/)
- The amount of carbon dioxide (CO2) each person produces or uses.  
[www.environmental-population.com/body\\_navigation.php](http://www.environmental-population.com/body_navigation.php)
- The total carbon emissions for a given person, organization, building, operation etc. The carbon footprint of an operational office typically include the carbon emitted by the commuting of the office staff. Wikipedia - Carbon footprint  
[www.astralweb.co.uk/smart-meters-glossary.html](http://www.astralweb.co.uk/smart-meters-glossary.html)



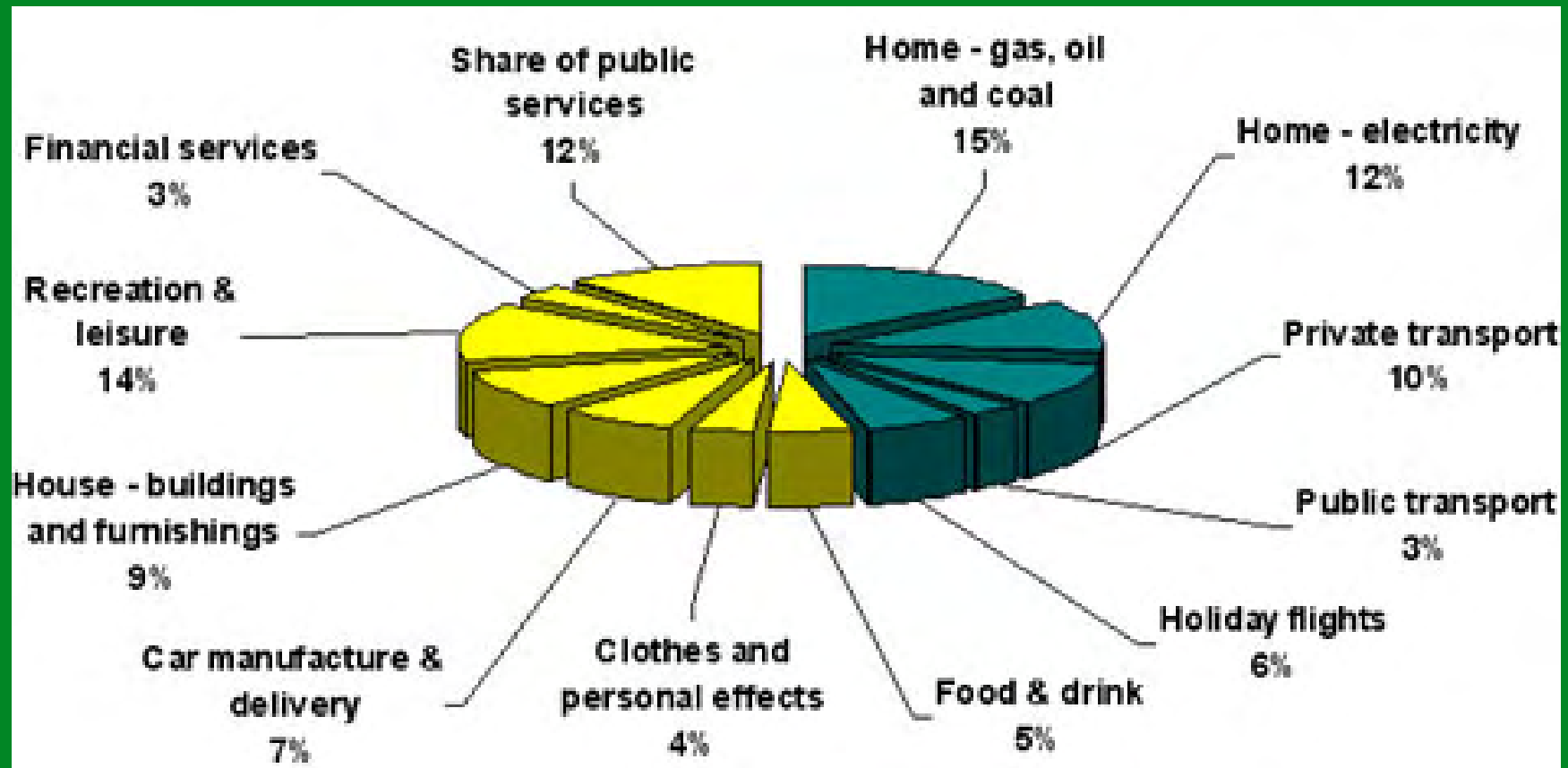
# What is the “Carbon Footprint”?

- The practical version

## Definition of Carbon Footprint from Carbonfootprint.com

- The carbon footprint is a measurement of all greenhouse gases we individually produce and has units of tonnes (or kg) of carbon dioxide equivalent.
- A carbon footprint is made up of the sum of two parts, the primary footprint (shown by the green slices of the pie chart) and the secondary footprint (shown as the yellow slices).
- 1. The **primary footprint** is a measure of our direct emissions of CO<sub>2</sub> from the burning of fossil fuels including domestic energy consumption and transportation (e.g. car and plane). We have direct control of these.
- 2. The **secondary footprint** is a measure of the indirect CO<sub>2</sub> emissions from the whole lifecycle of products we use - those associated with their manufacture and eventual breakdown. To put it very simply – the more we buy the more emissions will be caused.

# What is the “Carbon Footprint”?



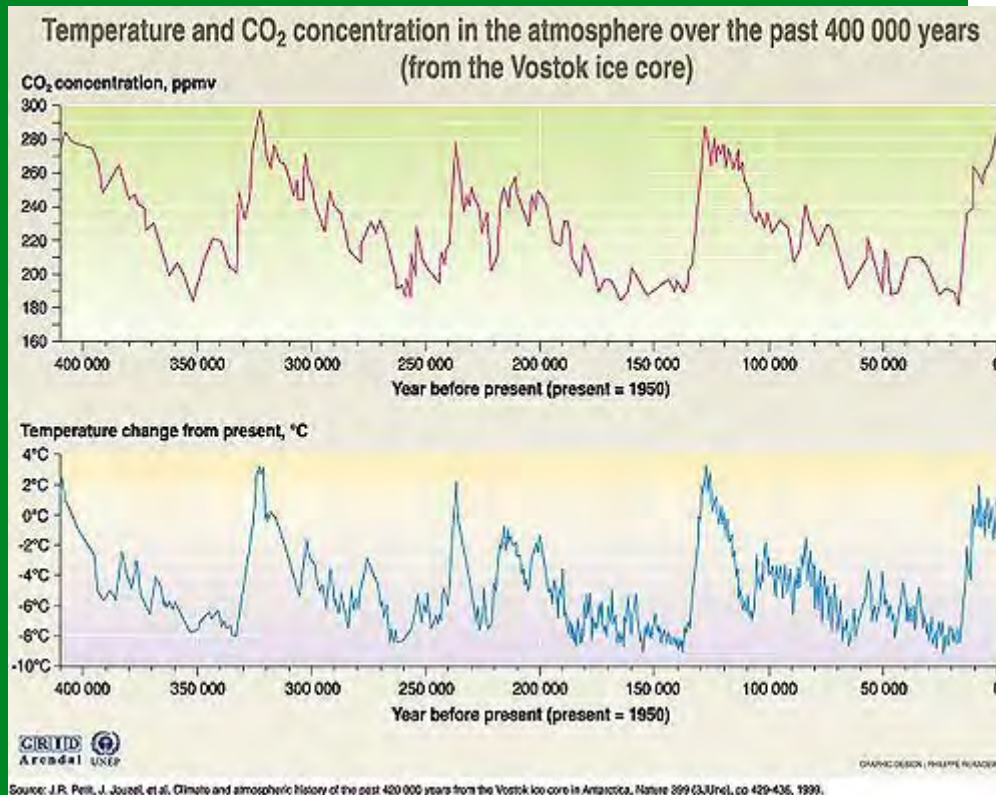
Indirect influence – 54%

Direct influence - 46%

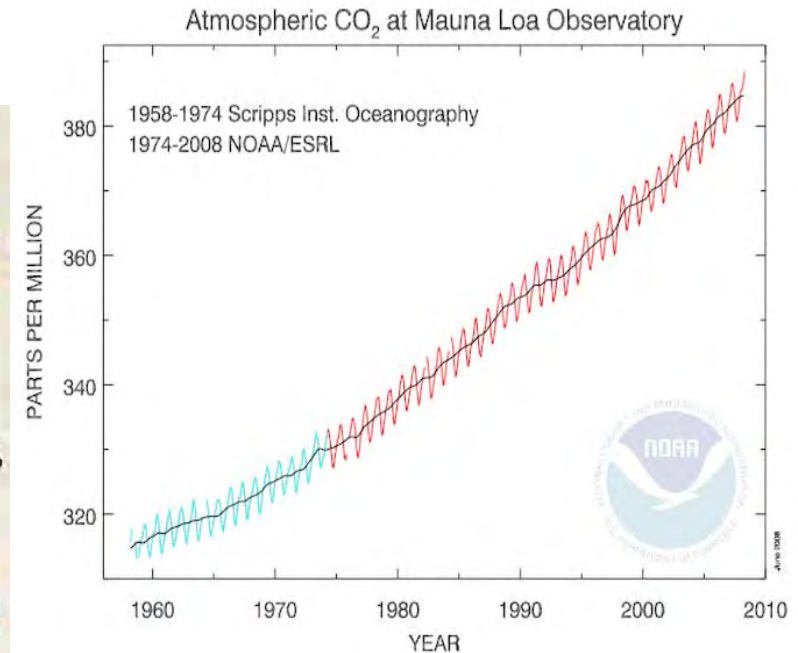
[Definition of Carbon Footprint](http://Carbonfootprint.com) from [Carbonfootprint.com](http://Carbonfootprint.com)

# What is the “Carbon Footprint”?

## The CO<sub>2</sub> impact



This graph shows the amount of Carbon Dioxide in the atmosphere during the last 400,000 years until 1950 ([reference the UNEP / GRID](#))



Dr. Pieter Tans, NOAA/ESRL  
([www.esrl.noaa.gov/gmd/cgg/trends/](http://www.esrl.noaa.gov/gmd/cgg/trends/))

## Unknown territory?



# What does the rise in CO2 levels mean?

General consensus is that:

- Air temperatures are rising
- Sea temperatures are rising
  - Sea levels are rising
- The effect is seeing changes in areas where crops are grown
- Numbers of extreme weather events are rising
  - Droughts will be more extreme
  - Floods will be more frequent



# Why Should I Care?

## Likely global effects

- Food costs may rise as different resources are used for food production
- Energy costs may rise as Governments make changes to energy supplies
- Insurance costs may rise as areas become more vulnerable to extreme weather events
- So .....





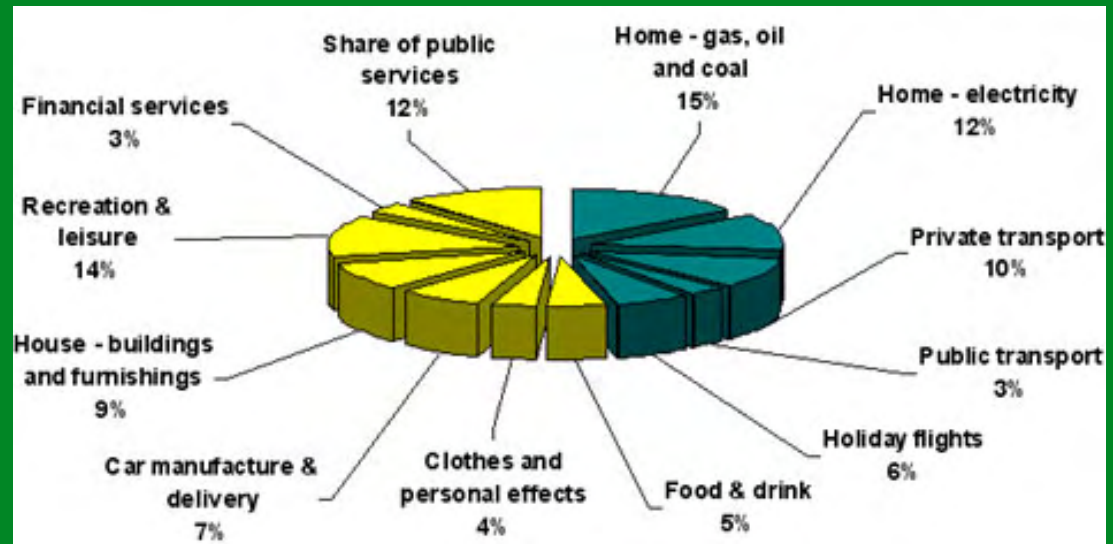
# Give me a Reason to Care

- Will the changes directly affect my pocket immediately?
  - Probably not – changes will be incremental
- Will I be short of food?
  - Probably not in New Zealand – although seasonal shortages will see higher prices as extreme weather (droughts / storms) happen more frequently
- Will the cost of transport rise?
  - This will be dependent on
    - Government moves on Climate Change
    - Global price of oil
- So .....



# Give Me a Reason to Care

- Where are the areas where I can make a difference?
- **Directly**
  - Home heating / cooling
  - Home electricity use
  - Private transport
  - Holidays
- **Indirectly**
  - Purchases of goods
  - Use of recreation facilities and services



# Give Me a Reason to Care - What can I do?

Source: EECA

- Home Heating / Cooling
  - Now without capital
    - Manage the heat / cooling in your home by closing / opening doors / windows / blinds
    - Use the most efficient heaters that you have
  - With capital
    - Insulation – save up to 50% of heating costs plus associated health benefits
      - Walls / ceilings / floors
    - Install more efficient forms of heating / cooling
      - heat pumps – more efficient energy use but size it correctly
      - Solar water heating
      - Low flow shower heads
      - Cylinder wraps on your hot water cylinder
  - Funding available in certain areas – ask the question



# Give Me a Reason to Care - What can I do?

Source: EECA

## Home electricity use

- Now without capital
  - Turn off the lights that are not in use
  - Turn off appliances at the wall
- With capital
  - Buy energy efficient appliances
  - Look to alternative sources of electricity
    - Solar
    - Wind
    - Community groups for electricity generation

Pressure Government in retention of renewable electricity sources

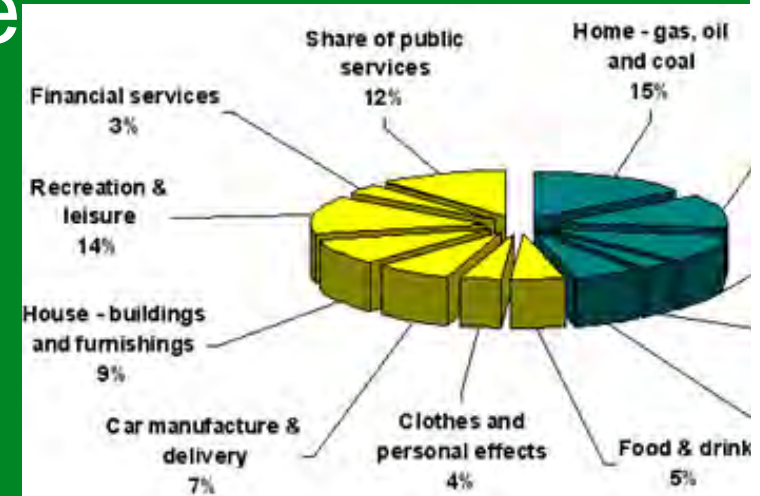


# Give Me a Reason to Care

## What can I do?

Source: EECA

- Indirect areas of influence – purchase of
  - Cars
    - Get the car most suited to your / your families needs
    - Fuel usage should be a high purchase factor
  - Clothes
    - Return to natural fabrics?
  - Houses
    - Look at the long term efficiency of the property – energy efficient or not
  - Furnishings
    - Look at the whole of life cost
  - Food
    - Buy in season vegetables / fruit / meat / fish
  - Drink
    - Why does bottled water cost more than petrol?!
  - Recreation and leisure
    - Enjoy – can it be done close to home?



All purchases should lower the ongoing cost of ownership

# Give Me a Reason to Care - What can I do?

Source: EECA

## Private Transport

- Now without capital
  - Use your car less especially for short journeys
  - Use the bus
  - Ride share
  - Cycle – if you have a bike
  - Walk
- With capital
  - Make fuel efficiency a key criteria in your next car purchase
  - Look at whole of life cost of your vehicle(s)

# Give Me a Reason to Care - What can I do?

Source: EECA

## Holidays / Conferences

- Have fun – enjoy the break!!
- Review where you are going and why
- Make trips of longer duration rather than short trips
  - Especially applies to air travel
- Look to travel using the most efficient mode for
  - Monetary value
  - Carbon cost
- If travelling by air look to offset the carbon cost
  - Applies to both corporate travellers and individuals

# Conclusion

- For the average family / person to make changes they need a reason
- The best reasons will also have positive financial benefits
- Changes that can be made now include
  - Lifestyle changes that are positive for CO2 and the pocket
  - Changes in travel mode / behaviour
  - Changes in energy use
  - Changes in attitude towards high carbon dependent goods

How much they save their pocket and the environment depends on their situation





One other thing

Policy makers need to  
set **TARGETS!!!!**

# Your homework

To calculate your Carbon Footprint for the conference

Carbon Cost	\$ value
1000	\$33.75
750	\$25.30
500	\$16.80
250	\$8.40
Per 100 km Air	\$0.96
Per 100 km Car	\$0.6617
\$ per 1000 kg CO2	\$33.75

Travel	Distance	Carbon Cost - kg CO2	Cost
<b>From</b>	<b>Air</b>		
Dunedin	2000 km	570	\$19.23
Christchurch	1500 km	442	\$14.91
Wellington / Nelson	1000 km	285	\$9.61
Palmerston	700 km	200	\$6.75
<b>From</b>	<b>Car</b>		
Wellington	1320 km	260	\$8.73
Palmerston	1080 km	212	\$7.14
Hamilton	250 km	49	\$1.65
Tauranga	410 km	80	\$2.71
Taupo	560 km	110	\$3.71
New Plymouth	720 km	141	\$4.76
Hastings	880 km	172	\$5.82
Whangarei	330 km	65	\$2.18
Within Auckland	80 km	16	\$0.55

# Calculate your Carbon Cost

Item	Carbon Cost - kg CO2	Cost
Travel from outside Auckland	570	\$19.23
Travel within Auckland	80	\$0.55
Staying at home	0	0
Staying at Conference 3	24	\$0.81
Conference "cost"	2	\$0.07
<b>Total Carbon Cost</b>	<b>676</b>	<b>\$20.66</b>
Offset		
Name		