**Environmental Sustainability Report**
**July 2012 - June 2013**

sustainability through
science and innovation

## Our Environmental Commitment

At **cesar** we believe healthy ecosystems are fundamental to our future. A thriving and sustainable world can be achieved where the environment is properly balanced with the needs of business and the community.

Caring for the environment is at the heart of what we do for our clients. In leading by example, we are committed to also taking responsibility for the impact that our staff and operations have on the environment.

We will:

- Understand and apply best practice environmental management options that are appropriate for our business;
- Work to achieve the environmental expectations of our staff, clients, suppliers and local community;
- Improve efficiency of our office and operations to minimise water and raw material use, energy consumption, waste and pollution generation;
- Create awareness among our staff of the potential environmental effect of operations with which they are involved, and how they can work towards minimising these environmental effects;
- Conduct regular assessments of the environmental effects of our operations to identify potential areas for improvement, and to follow through with programs to achieve these improvements;
- Develop policies and procedures to ensure the longevity, consistency and usefulness of environmental initiatives;
- Continue to hold environmental sustainability as a core company value.

Using these guiding principles, we will strive to continuously improve our environmental management.

This report outlines how **cesar** is managing its impact on the environment including:

- the environmental commitment
- carbon footprint analysis, 2012/13
- actions underway to help reduce environmental impact, 2013/14

***References:***

*The Carbon Footprint of Victoria's Small and Medium Enterprises, A Carbon Down Research Report*, Carbon Down (climate change partnership between VECCI and the Victorian Government), April 2011.

*Carbon Management at Work, EPA Victoria website, http://www.epa.vic.gov.au/business-and-industry/lower-your-impact/carbon-management-at-work#_measure*

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wildlife ecology
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sustainable agriculture

## Measuring and Monitoring

Measuring and monitoring **cesar**'s impact is a critical part of our environmental management work. It allows us to quantify our impact, identify areas of priority and track performance overtime. As the business grows we may not be able to reduce our overall footprint but we do want to manage it responsibly.

## *Carbon Dioxide Emissions*

**cesar**'s carbon emissions for the 2012/13 financial year period were approximately 56 tonnes* (Figure 2 outlines the breakdown of emissions), which is equivalent to annual usage of approximately 14 average cars or the size of 556 swimming pools. This is an increase of 29% from two years prior in 2010/11 where the footprint was approximately 43 tonnes (Figure 3).

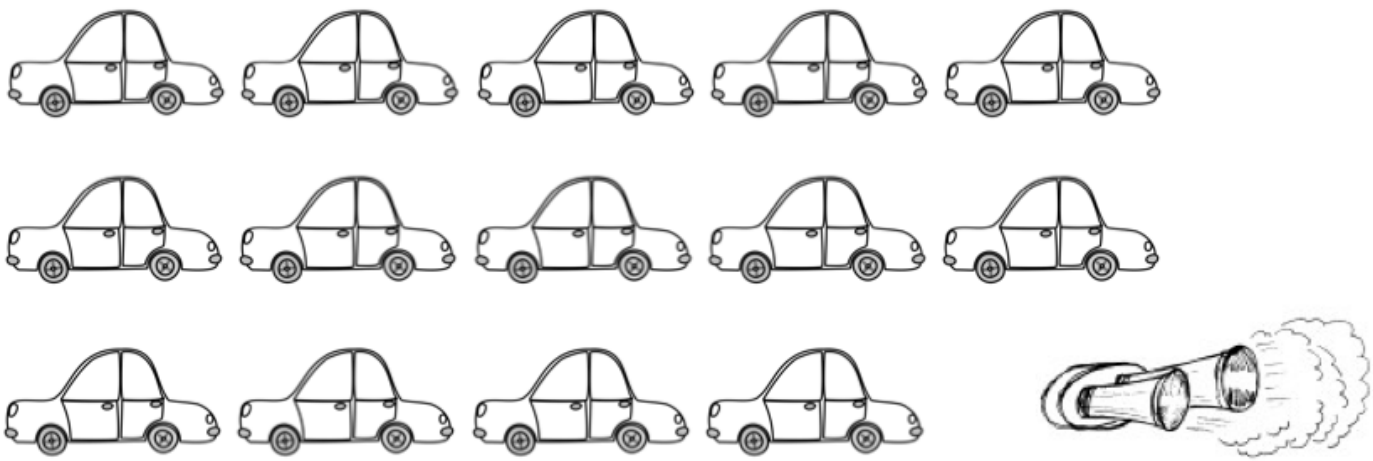

*Figure 1: The annual use of 14 cars is an approximate equivalent to **cesar**'s $CO_2$ emission during 2012/13.*

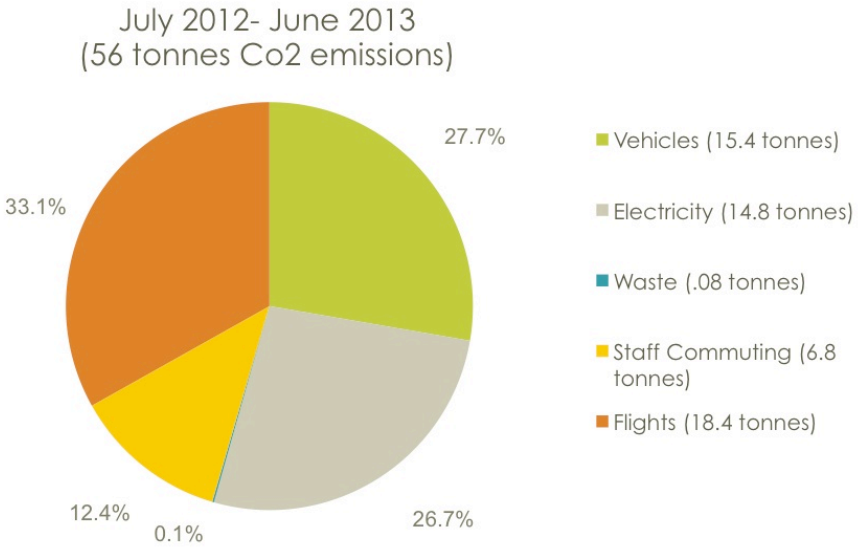


*Figure 2: Breakdown of **cesar**'s annual emissions 2012/13.*

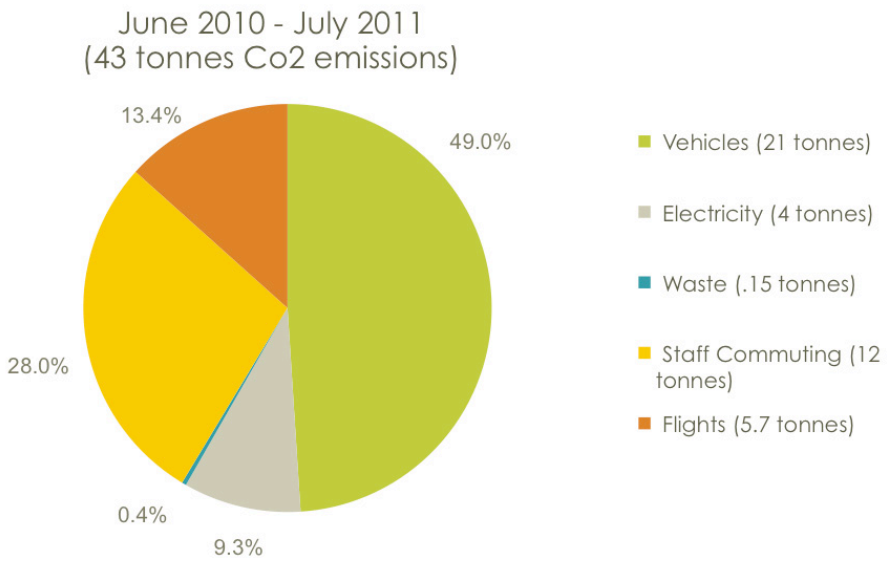


*Figure 3: Breakdown of **cesar**'s annual emissions 2010/11.*

The increase in emissions is primarily attributable to the following:

- An increase in electricity usage by 271%. There was a relocation and increase in size of **cesar**'s office from 55 $m^2$ to 90 $m^2$ . Besides the increase in lighting demand within the office, **cesar** also has a higher share in electricity usage from shared spaces/common areas of the AMA building compared to **cesar**'s previous tenancy at 55 Flemington Road North Melbourne.
- An increase in flight emissions by 220%. There was an unusually distant location for a client project – the Christmas Island project required two return flight journeys from Melbourne for three staff in late 2012. Overall **cesar** purchased 8.9 tonnes in flight carbon offsets.


*Figure 4: Relative $CO_2$ emissions per **cesar** staff member across two different years.*

The relative emissions per staff member have increased from 2010/11 to 2012/13 as outlined in Figure 4. This is because emissions have increased (due to the activities mentioned above) while staff numbers have been relatively stable.

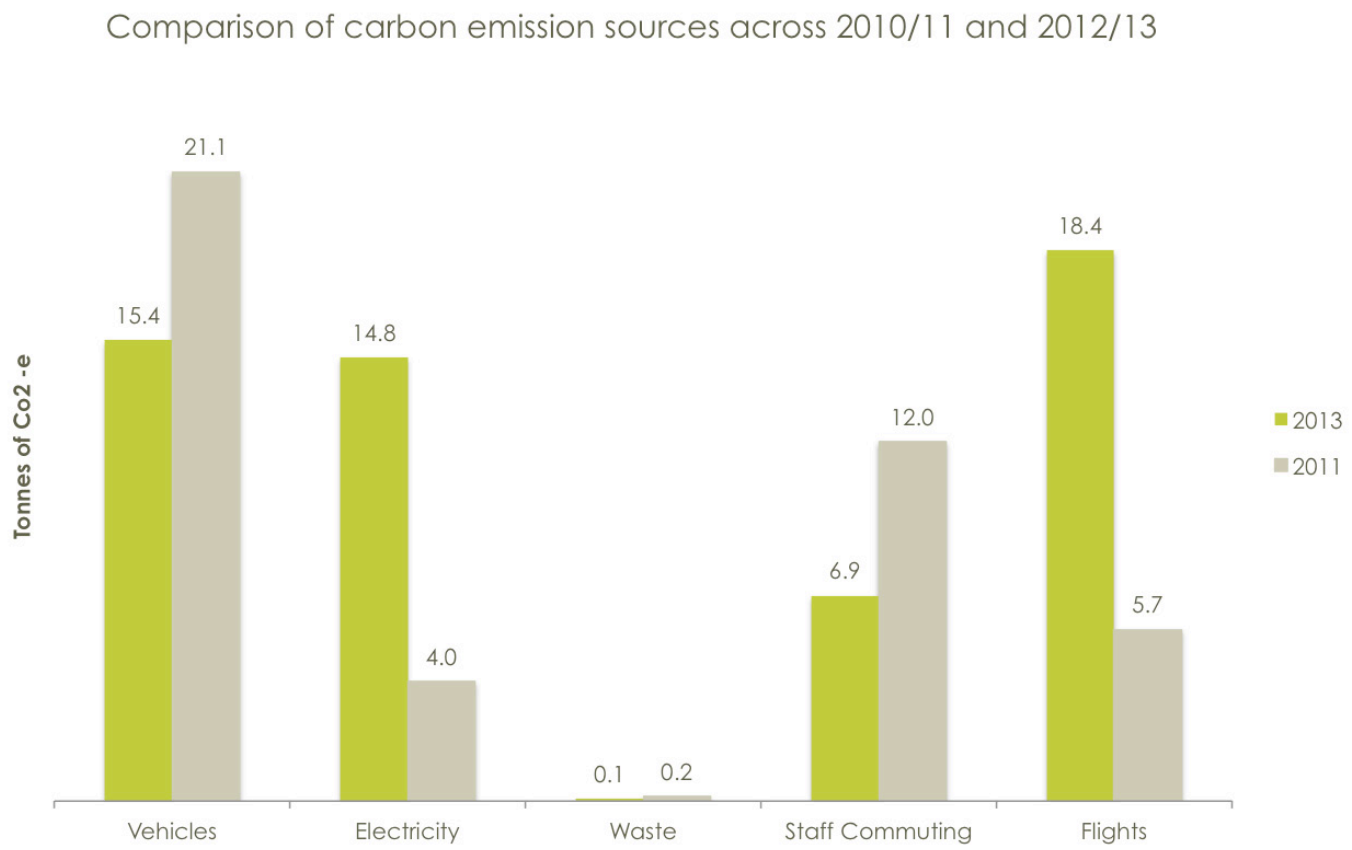


*Figure 5. The changes in tonnes of CO2 emissions for each major emissions source.*

While there have been increases in emissions from particular sources in **cesar** there have also been decreases (Figure 5). Positively, since 2010/11, there have been reductions in emissions from staff commuting by 43%, car usage (company vehicles) by 27%, and waste by 48%. Discussion of these areas is outlined below.

***Decrease in staff commuting***

**cesar** staff use a range of options to get to the office located at 293 Royal Parade Parkville. Figure 6 presents the emissions associated with staff commuting travel in 2013.

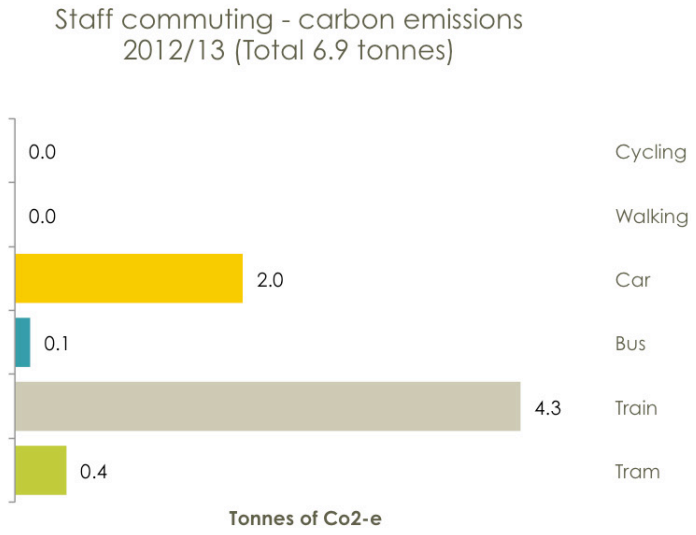


*Figure 6: Staff commuting $CO_2$ emissions profile – based on staff commuting survey.*

Compared to the 2010/11 year there has been a decrease in emissions associated with staff commuting by 43%. This is attributable to an increase in lower emission intensity travel options (e.g. bike, walking and tram) and a decrease in higher emission intensity travel options (e.g. car, bus and train; Figure 7). Furthermore there was a reduction in the amount of kilometres travelled by staff with 51 km travelled per working day in 2010/11 compared to 36 km in 2012/13 – largely attributable to closer proximity of staff homes to **cesar**.

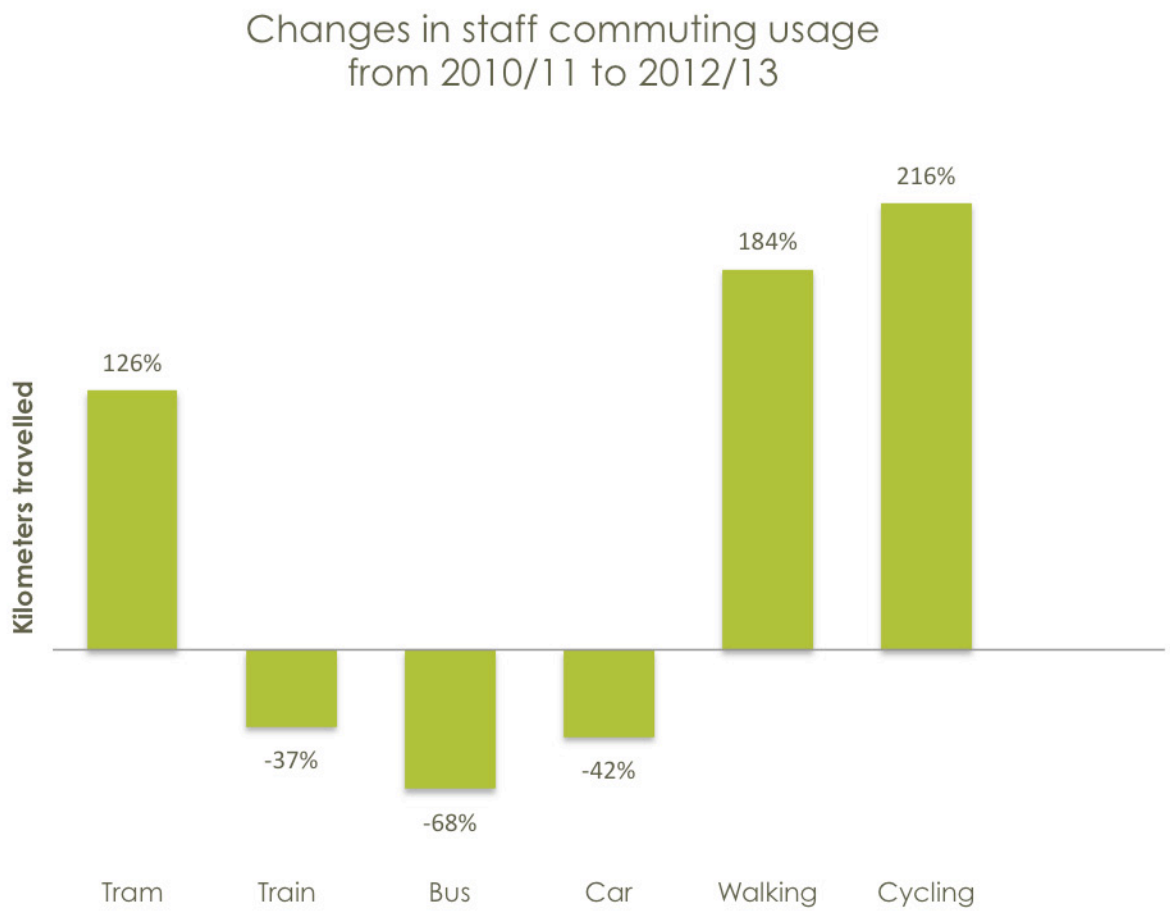


*Figure 7: Changes in staff commuting usage, which is based on the kilometres usage of each commuting option in 2012/13 compared to that of 2010/11. Calculations were determined based on a staff commuting survey completed by each staff member.*

An increase in walking and cycling is very positive as these activities result in zero emissions. **cesar**'s growing culture of sustainability may have encouraged this outcome. This culture has been supported by a range of factors such as the presence of a staff Sustainability Team; the availability of a business bike; the shared interest in bikes amongst staff; and activities such as Enviro Week where staff committed to sustainable practices.

***Decrease in car usage***

In 2010/11 company car usage was the largest component of **cesar**'s carbon footprint at 50% (Figure 2). It is still a leading contributor of emissions however usage has dropped by 27% (Figure 5). This is likely attributable to the roll back of field trials within the Sustainable Agriculture division. Such field trials require staff to visit regional Victoria throughout the life of a project and as such would be significant contributors to the overall car usage, along with the platypus-based projects of Biodiversity Conservation division.

***Decrease in waste***

In the two years since the 2010/11 carbon footprint report **cesar** has implemented a range of initiatives to reduce waste including an office compost bin, reusable takeaway coffee cups, a Presso coffee maker (no "pods" and no electricity – see Figure 9), recycling signage and staff education/engagement on waste. While waste is the smallest component of **cesar**'s carbon footprint it was an opportunity to engage staff and make immediate changes resulting in reduced impact and reduced $CO_2$ emissions. Figure 8 outlines the change in **cesar**'s waste emissions profile

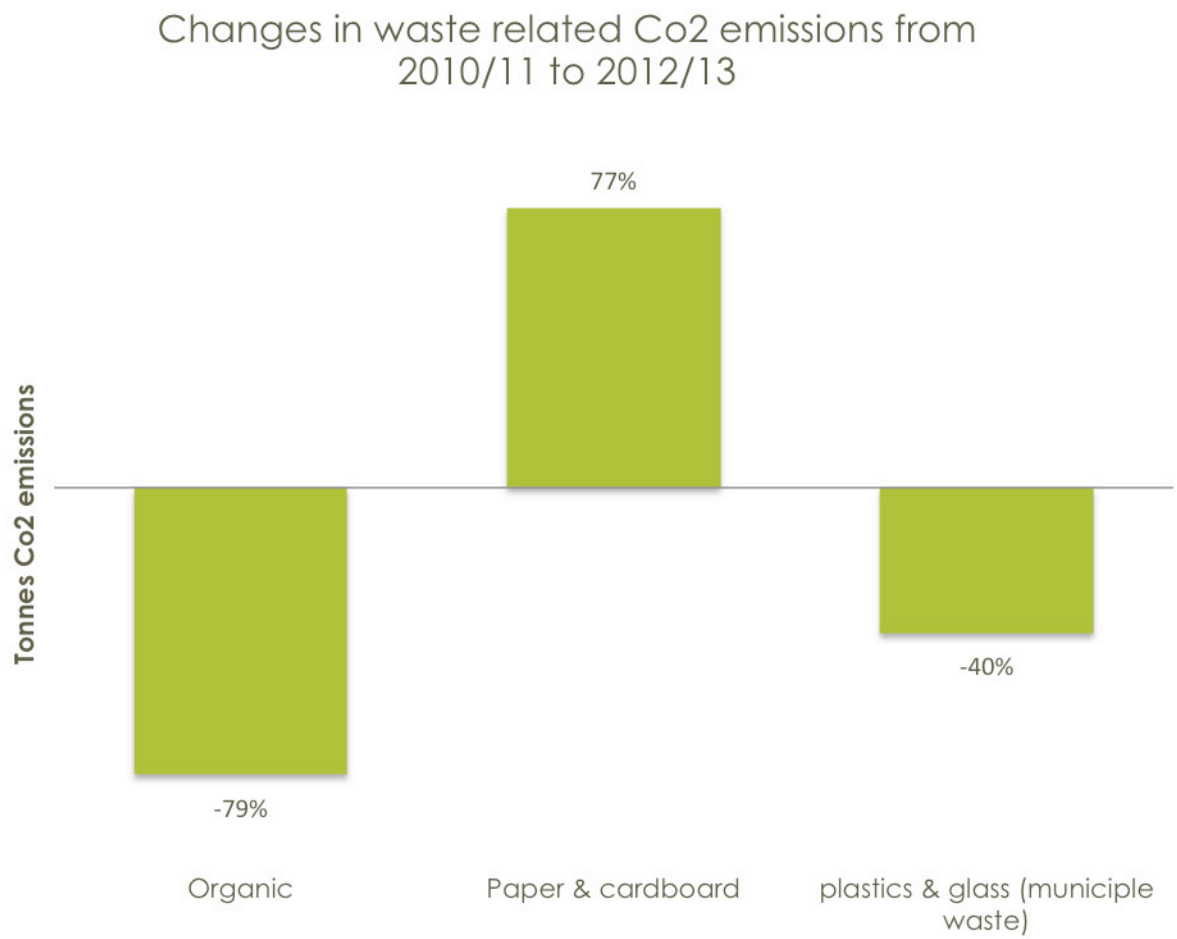


*Figure 8: Changes in **cesar**'s landfill related emissions over 2 years. There are some limitations as discussed below.*

The current method for calculating waste emissions is to conduct a one-week audit of office waste and extrapolate to a year (the office is open 50.5 weeks per year). There are some limitations with this approach given the number of variables including how many people are in the office and the type of waste that may be generated in a given week. A longer audit period would assist to make calculations more accurate. Having said this it appears fairly conclusive that the office compost bin has resulted in significant reductions in organic waste as highlighted in Figure 8.

Positively, overall there was a decrease in landfill related emissions however there was still a number of items found in bins that could have been recycled or composted. For example, paper and cardboard items. The reasons for this need to be considered and addressed.

*Figure 9: **cesar**'s compost bin and "Presso" coffee machine, which does not use wasteful pods.*

** Not included in this 2010-11 FY carbon footprint analysis: laboratory waste & electricity; chemical/field related waste; remote work e.g. staff member working from home; embodied carbon in products **cesar** purchases.*

## Action Items

Based on the 2012/13 Carbon Footprint there are a number of challenges to address including:

- Increase in electricity
- Increase in flights – this will likely stay high with anticipated projects on horizon.
- Celebration of staff commuting efforts highlighting the reduction in $CO_2$ emissions
- Amounts of landfill waste that should be composted or recycled
- Continuing to effectively manage vehicle emissions as this is fundamental to **cesar**'s work

The Sustainability Team will consider these key issues and seek to make commitments and action in the 2014/15 year. In doing so the team will follow best practice emissions management as outlined by the EPA Victoria (Figure 11).

## Carbon Management – Best Practice (EPA)

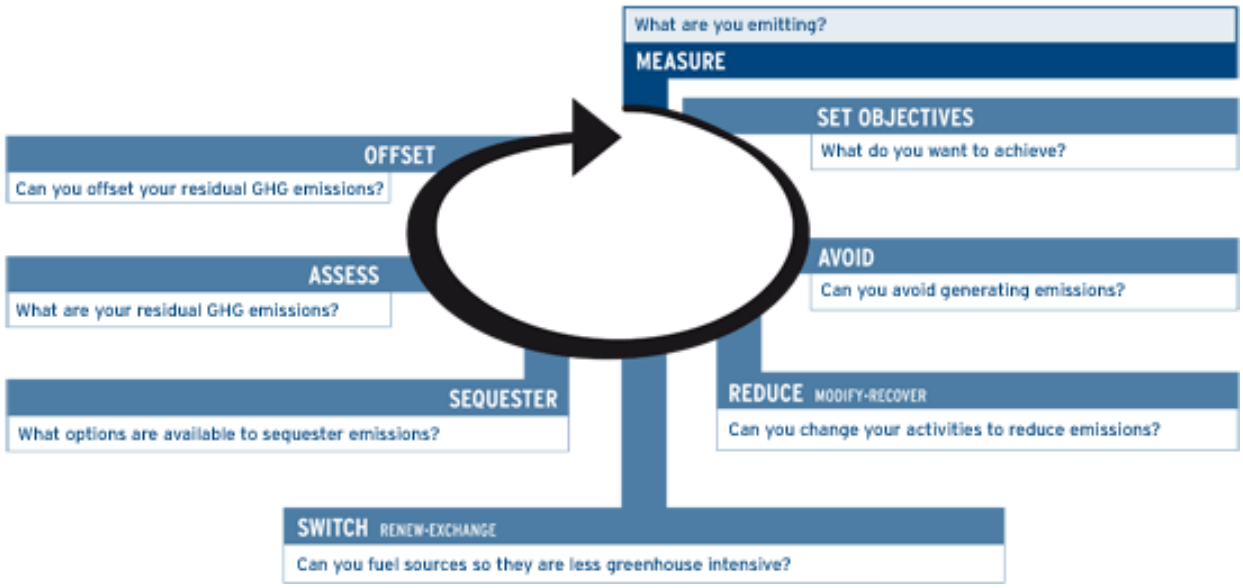


*Figure 11: EPA Victoria carbon management diagram outlining best practice.(Source) http://www.epa.vic.gov.au*

## 2013/14 Year

The 2013/14 year is currently underway and will be formally reported on. However some highlights from the year have included:

- An annual theme/focus on "waterway health & your sustainability" to engage staff
- Education and collection of E-waste from staff (Figure 10)
- Enviro-Week campaign participation where staff made personal sustainability commitments
- The initiation of an environmental newsletter for staff – The Sustainability Chronicles focusing on **cesar**'s and staff progress, work, achievements in regards to sustainability inside and outside the office.

A range of staff engagement activities have focussed on waste over the last 2 years including an E-waste collection week, whereby staff were educated on the impacts and correct disposal of e-waste, along with the collection of mobile phones and batteries from staff.


*Figure 10: E-waste collected from **cesar** staff over a 1-month period in 2013.*

## Carbon Offsets

In 2012/13 a total of 8.9 tonnes of carbon offsets was purchased through aeroplane flight providers. This would reduce **cesar** carbon footprint to 47.1 tonnes of $CO_2$.

## History & Context of Business $CO_2$ Emissions

In the 2010/11 financial year **cesar** investigated its carbon footprint for the first time to establish a benchmark for ongoing monitoring and improvement. **cesar**'s annual carbon emissions were approximately 43 tonnes compared to 56 tonnes in 2012/13 . Putting this in perspective, the overall emissions of Small to Medium Businesses in Victoria in 2009 was approximately 36.1 million tonnes. Also, Victorian businesses with 0-19 employees had an average emissions rate per person of approximately 16.3 tonnes (Carbon Down, 2011) compared to **cesar**'s 5.4 tonnes per person in 2010/11 and 7 tonnes in 2012/13. It is worth noting that there are limitations with this comparison considering different methods of $CO_2$ footprint calculations across businesses.

It is clear that by itself **cesar** has comparatively very little impact on the bigger carbon emissions picture. However, as the company grows it can be expected that carbon emissions will also. With conscientious management, the rate at which carbon emissions increase can be controlled.

| Actions<br>Below is a list of initiatives and processes that staff members are currently undertaking to help **cesar** manage its impact. | Reducing demand on earth's resources | Reducing **cesar**'s emissions | Offsetting emissions | Staff engagement |
|---|---|---|---|---|
| **Leadership** | | | | |
| Sustainability team - internal group of people who lead our environmental sustainability, devise strategies and implement actions | | | | ✔ |
| | | | | |
| **Transport** | | | | |
| Skype and conference calling facilities to reduce travel for meetings | | ✔ | | |
| Supporting working from home arrangements | | ✔ | | |
| Encourage public transport commuting e.g. staff functions | | ✔ | | ✔ |
| Business bike for staff errands and commuting between locations | | ✔ | | ✔ |
| Reduce work km where possible e.g. staying overnight, planning ahead | | ✔ | | |
| Offset business flights through airline programs | | | ✔ | |
| | | | | |
| **Office supplies** | | | | |
| Shared stationery in office | ✔ | | | ✔ |
| Encouraging a paper free office culture | ✔ | | | ✔ |
| *Providing large screens for easy document reading*<br>*Double sided printing & scrap paper supply*<br>*Client reports provided electronically* | | | | |
| Generic group wide business cards | ✔ | | | |
| Reusing old branded stationery | ✔ | | | |
| | | | | |
| **Purchasing** | | | | |
| Stationery orders made in bulk and with recycled products where possible | ✔ | | | |
| Recycled or bamboo paper reams | ✔ | | | |
| Printing supplier – veg based inks and recycled stock | ✔ | | | |
| Compostable plastic for laboratory supplies where possible | | ✔ | | |
| | | | | |
| **Energy** | | | | |
| All electronics (where possible) switched off every night & weekends | | ✔ | | ✔ |
| All lights switched off at night & weekends | | ✔ | | ✔ |
| | | | | |
| **Waste** | | | | |
| 6 month waste strategy implemented Feb 2012 | ✔ | ✔ | | ✔ |
| Office compost initiated April 2012 | | ✔ | | ✔ |
| Replaced coffee machine – no longer use "pods" in April 2012. | ✔ | ✔ | | ✔ |
| E-waste collection in 2013 | ✔ | ✔ | | ✔ |
| Enviro week initiative – personal staff sustainability commitement | ✔ | ✔ | | ✔ |
| Recycling paper, cardboard, bottles etc and improve bin signage | | ✔ | | ✔ |
| Communal reusable takeaway cups | ✔ | ✔ | | ✔ |
| Rechargeable batteries used for field & office equipment | ✔ | ✔ | | ✔ |
| Reuse and maintain laboratory supplies e.g. pitfalls, vials | ✔ | | | |
| | | | | |
| **Office environment** | | | | |
| Plants to help naturally clean air | | ✔ | | ✔ |

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