

Carbon Down, Carbon Calculator

Case Study

CS1009 July 2009

Survey, calculate and analyse the carbon emission of small and medium businesses

Project Summary:

The Carbon Down, Carbon Calculator is an online business carbon footprint survey that calculates carbon emission production for small to medium businesses in Victoria. The survey is a flex application that runs as a flash application in a web browser. The information provided is being used to measure the carbon footprint of small and medium businesses in Victoria and work out the steps we need to take to further reduce it.

The calculator use extensive algorithms and parameter tables in determining carbon emission factors. Calculations are browser based. This calculator can work as a widget.

View the calculator online at: <http://carbondown.ivt.com.au/>

Client:

Carbon Down
<http://www.carbondown.com.au>

Client Business Background:

Carbon Down is a climate-change initiative of the Victorian Government, its agency Sustainability Victoria, and the Victorian Employers' Chamber of Commerce and Industry (VECCI).

Project Challenge:

Carbon Down wanted to be able to provide an accurate, intuitive and user friendly online application to enable users to enter relevant details to calculate their business' carbon emission footprint, and be able to convert this massive amount of data into readable and meaningful reports.

The ultimate goal of Carbon Down is to provide funding, knowledge and support to develop projects that make it easier for small to medium businesses to reduce their carbon footprint.

Actions:

Development of a web application with the following functionality:

- Full data collection
- Full data summarisation and reporting functions
- User friendly survey



Outcomes:

The Carbon Down, Carbon Calculator is a simple and effective Flash application that uses data entered by the user, to calculate the carbon emission production of a small to medium business based on their electricity, gas, vehicles, flights, waste and business industry information. These details are all recorded in a central database and can be exported in CSV file format.

Technology Used:

The Carbon Down, Carbon Calculator was created using Adobe Flex (using ilog elixir components), PHP, MySQL and runs as a Flash Application.

Adobe Flex:

Adobe Flex is a software development kit released by Adobe Systems for the development and deployment of cross-platform rich Internet applications based on the Adobe Flash platform. Rich Internet applications (RIAs) are web applications that have some of the characteristics of desktop applications. The advantage of Flex is that it doesn't rely on page reloads, can have animations, interactive graphs and handles large datasets.

PHP:

PHP is a widely-used general-purpose scripting language that is especially suited for web development and can be embedded into HTML.

MySQL:

MySQL is a relational database management system (RDBMS). The program runs as a server providing multi-user access to a number of databases.

Adobe Flash:

Adobe Flash (previously called Macromedia Flash) is a multimedia platform originally acquired by Macromedia and currently developed and distributed by Adobe Systems. Since its introduction in 1996, Flash has become a popular method for adding animation and interactivity to web pages. Flash is commonly used to create animation, advertisements, and various web page components, to integrate video into web pages, and more recently, to develop rich Internet applications.

Screenshots:

Victoria's Business Carbon Footprint Survey
Helping to understand and support Victorian small business

Navigation: Introduction | Business Info | Business Profile | Electricity | Natural Gas | Other Fuels | Vehicles | Flights | Waste | Results | Receive Your Gift

20.74 TONNES • 0.32 TONNES • 16.62 TONNES • 3.33 TONNES • 5.77 TONNES • 2.56 TONNES • 49.34 TONNES

1. Introduction

Thank you for taking part in Victoria's Business Carbon Footprint Survey.

About the survey
The information you provide will be used to measure the carbon footprint of small and medium businesses in Victoria and work out the steps we need to take to further reduce it.
[Read More](#)

What will I need?
To complete the survey you will need to have access to the following information (if applicable to your business):
→ 12 months of electricity bills
→ 12 months of gas bills
→ Other fuel usage information or estimates
→ Vehicle usage data or estimates (fuel consumption or kilometres travelled)
→ Annual air travel information or estimates
→ Waste details or estimates

Start the survey
You will be unable to exit the survey and save your progress, however the survey will not time out so you will be able to return to your data as long as you do not close the browser.
To ensure you are able to proceed with the survey please answer the following question:
Do you have access to 12 months of energy bills (electricity and/or gas) that are billed directly to your business, as a proportion of your residential bill, or shared with other businesses?
☐ Yes
☐ No
☐ I accept the [terms and conditions](#).

UPON COMPLETING THE SURVEY YOU MAY BE ELIGIBLE TO RECEIVE A GIFT.
The gifts include a \$100 voucher from www.easysave.com.au or a donation made on your behalf to the Brotherhood of St Laurence, The Smith Family, Landcare Australia (Victorian based projects), or the VECCI Business Relief Fund (Business Relief for Businesses).

SURVEY CLOSING
24.7.2009

[NEXT](#)

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3. Business Profile

To help us better understand your business we need to find out a few things about you.

Do you own your building premise?
☐ Yes
☐ No

Is your building premise a stand alone building or part of a building complex?
Standalone

Does your business pay building outgoings or base building charges?
☐ Yes
☐ No

Is your business home-based?
☐ Yes
☐ No
If your business is home based you need to estimate what percentage of the total bills your business is responsible for. You will be asked for an estimate in a later question in the survey.

Do you share any of the following with other businesses or tenants?
☒ Electricity
☒ Natural Gas
☒ Waste

[BACK](#) [NEXT](#)

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7. Vehicles

Please enter your business' vehicle usage for the past 12 months:

Does your business operate company vehicles?
☐ Yes
☐ No

Please enter your business' vehicle usage:

Vehicle Name/Fleet	Fuel Type	Litres	Kilometres	Time Period	Vehicle Type	Repeat
Vehicle 1	petrol	0	200	per week	large/cylinder	1

[Add Vehicle](#) [Remove Vehicle](#)

[BACK](#) [NEXT](#)

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Navigation: Introduction | Business Info | Business Profile | Electricity | Natural Gas | Other Fuels | Vehicles | Flights | Waste | Results | Receive Your Gift

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10. Results

Your Business Carbon Emission

Summary	Tonnes	Percent
Electricity	20.74	42.03%
Natural Gas	0.32	0.65%
Other Fuels	16.62	33.68%
Vehicles	3.33	6.75%
Flights	5.77	11.69%
Waste	2.56	5.19%
TOTAL	49.34	

Thank you for completing the Carbon Footprint Survey. This information will be used to find solutions for small and medium businesses to reduce carbon emissions.
You can [download your survey data](#) for future reference in a CSV file.
☐ I certify that this data is true and accurate.

[BACK](#) [SUBMIT AND ENTER CONTACT DETAILS](#)