



An Australian Government Initiative


Public Disclosure Summary

Virgin Australia

1 July 2014 – 30 June 2015

Declaration

To the best of my knowledge, the information provided in this Public Disclosure Summary is true and correct and meets the requirements of the National Carbon Offset Standard Carbon Neutral Program.

	6/7/16
Robert Wood	
Head of Sustainability	

Type of carbon neutral certification: *Virgin Australia Fly Carbon Neutral Program*

Verification

Date of most recent external verification/audit: 21 August 2015

Auditor: Carbon Risk Management – Not applicable

Auditor assurance statement link: Not applicable



1. Carbon neutral information

Introduction

Virgin Australia's Fly Carbon Neutral Program allows guests flying with Virgin Australia to offset the emissions attributable to their seat when booking their flight.

The greenhouse gas emissions are calculated per city pair flown in the previous twelve months (the 2013/14 financial year) within the network, which is then divided by the number of persons that travelled on these city pairs during that time and adjusted to account for freight. The number of persons that travelled on these city pairs during that time includes paying guests and staff on airline business (duty travel).

Adopting the previous twelve months of data enables emissions to be calculated at the time of passenger purchase, and normalises any variations in operational parameters occurring.

Virgin Australia purchases offsets in advance so that the correct price is used in calculating the cost to passengers purchasing them. Offsets are then surrendered by Virgin Australia after the fact. This process is monitored by the finance department to ensure there are always sufficient offsets available for purchase by passengers.

Figure 1, below illustrates the general Fly Carbon Neutral Program operated by Virgin Australia. Noting that prior to the point of a passenger making a flight the emissions per seat for each city pair are known (based on the previous year), and the cost per tonne CO₂-e is known as VCUs are purchased in advance.



Figure 1 Illustration of the general Fly Carbon Neutral Program steps.

Figure 2, below, illustrates the interrelationship between the service (Carbon Offset Program), the function of the service, the relevant function for the LCA, the functional unit (kg CO₂-e/passenger/city pair), and the reference flow.

Note:

ISO 14044 requires a critical review of the greenhouse gas LCA when the LCA is going to be publicly available and used for the purposes of comparing one product/service with another. The Virgin Australia LCA has been prepared as part of the requirements in the application for NCOS-CN certification only. As such, the data and the conclusions presented in the LCA are intended for use by Virgin Australia and the Department of Environment only. They will not



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be used for comparison with any other similar service or product. As a result, this LCA does not require a critical review and one has not been undertaken.

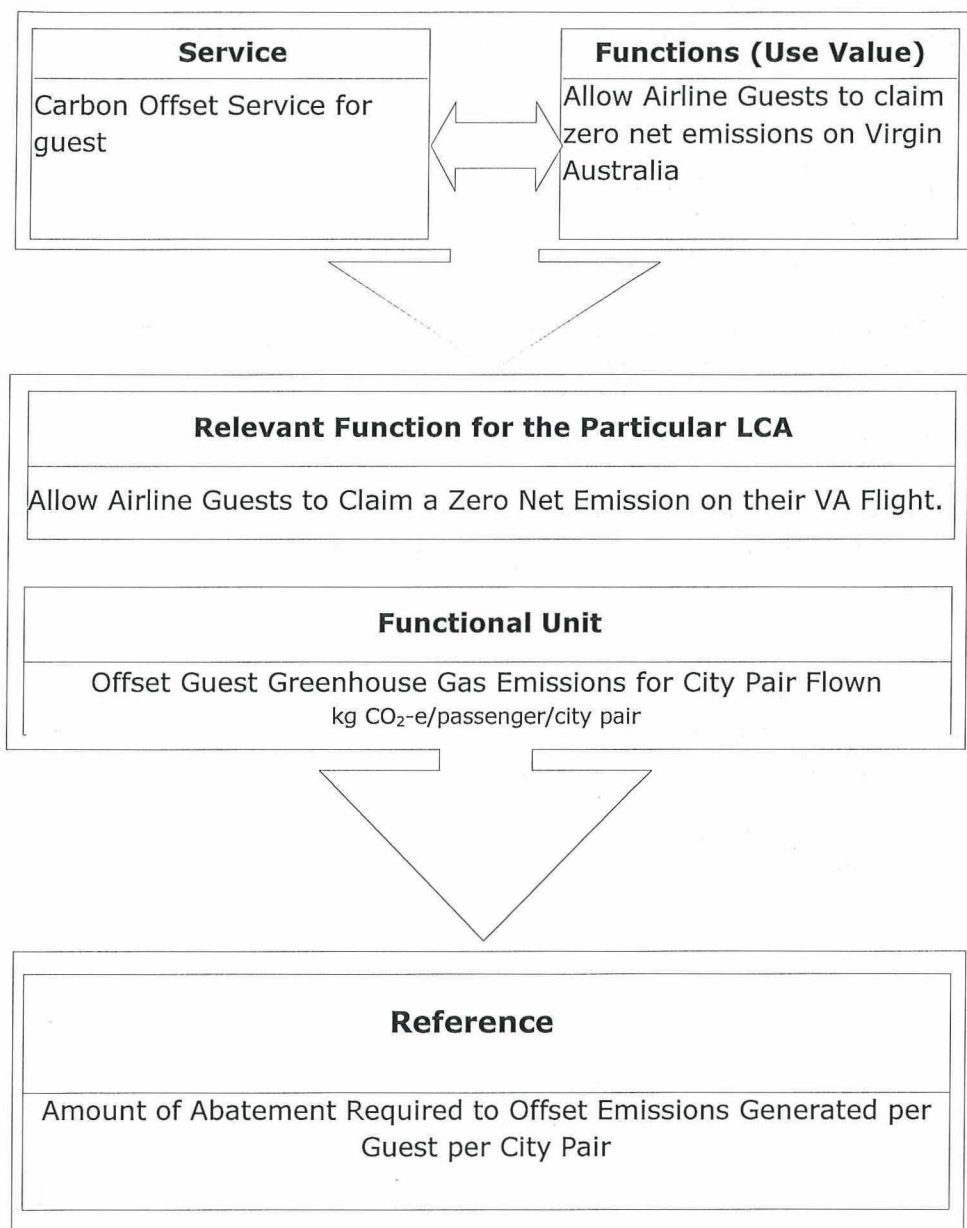


Figure 2 Program Function Overview

Emission sources within certification boundary

Quantified sources

The Life Cycle Assessment applies to the operations of aircraft operated by Virgin Australia (domestic and international) including Virgin Australia Regional Airlines and Virgin Samoa



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regardless of location. It does not include the operation of aircraft belonging to airline partners e.g. Delta, Air New Zealand, Etihad and Singapore Airlines.

There are three main areas of Virgin Australia's operations that are assessed for inclusion in the Life Cycle Assessment and where greenhouse gas emissions are tallied for allocation to a particular flight. These areas are:

- Aircraft Operations: This area relates mainly to fuel burnt and in-flight catering activities;
- Aircraft Operations Support: This area includes provision of support to aircraft operations; and
- Airline Operations Support: Administration and logistics support required for the day to day operation of the airline.

Non-quantified sources

The following emission sources have not been quantified in line with the provisions in the NCOS. The impact of excluding these sources is not expected to materially affect the overall total emissions.

- Office staff travel to/from work has not been included as the majority of emissions from staff commute has been captured in the flight crew and ground services commuting estimate and the emissions from commuting to the office will be minimal compared to the effort to gather this information.

Figure 3, below, illustrates the emissions that are within our boundary and indicate whether they are quantified or non-quantified sources.



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Organisation Boundary





Figure 3 Emissions overview

2. Emissions reduction measures

Part A. Emissions over time

Over time, total emissions for Virgin Australia have been

Table 1. Emissions since base year				
	Base Year (2010/11)	2012/13	2013/14	2014/15
Scope 1	2,976,751	2,285,452	3,312,365	3,302,763
Scope 2	14,735	44,325	39,392	17,222
Scope 3		189,906	263,938	284,545
Total	2,991,486 tCO ₂ -e	2,503,636 tCO ₂ -e	3,615,695 tCO ₂ -e	3,604,530 tCO ₂ -e

Emissions for Virgin Australia's opt-in product: Carbon neutral flight services

Table 2. Carbon offsets purchased	
Year	Carbon Offset (t)
2011/12	65,971
2012/13	49,644
2013/14	38,653
2014/15	32,747

Part B. Emissions reduction strategy

Virgin Australia is committed to addressing our climate change impacts through a combination of fuel efficiency programs, energy reduction programs, and carbon offsetting.

Jet fuel contributes to the majority of our emissions and is the focus of our fuel efficiency program. Virgin Australia have a dedicated Fuel Efficiency team comprising of pilots and data analysts, whose role it is to continually investigate and implement fuel efficiency improvements. This has been focussed on reducing the weight of the cabin by removing unnecessary items.



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Biofuels not only have a smaller carbon footprint but also burn more efficiently than regular jet fuel. This is why we have an aspirational target to use 5% biofuels by 2020 in an effort to further reduce our emissions.

Complementing the two initiatives above, we use carbon offsets to cover those emissions from guests who choose to offset the emissions generated through their travel. In the coming year we plan to grow our offsets program to reach a larger portion of those flying with Virgin Australia.

Part C. Emissions reduction actions

Measures include:

- Fleet renewal: As mentioned in prior years Virgin Australia is in the middle of a five year \$2.5 billion fleet renewal program. We are already ahead of many of our industry peers in this regard as we already operate a young and fuel efficient fleet, with an average mainline fleet age of just 4.2 years. Maintaining a young fleet allows us to benefit from technological advancements made by manufacturers in improving the fleet efficiency.
- Fuel Efficiency: Virgin Australia has made efforts in ground operations to reduce time spent in ground operations, resulting in over 5,000 tCO₂-e reduction of emissions.
- Sustainable Aviation Fuel: Virgin Australia is actively involved in sustainable aviation fuels. During this period we have continued to participate in the Sustainable Aviation Fuels User Group as well as international discussions with ICAO on analysing the methodology for assessing the lifecycle carbon reduction of different biofuel production processes.
- Energy Efficiency: We have upgraded the lighting in our maintenance hangar in Brisbane, replacing all original lights with LED lights, saving about 8% electricity each year.

3. Emissions summary

Table 3. Emissions Summary

Scope	Emission source	t CO ₂ -e
1	Aviation Fuel	3,300,101
1	ULP	19
1	Diesel	2,639
1	Kerosene	5
1	Engine oil	162

**Table 3. Emissions Summary**

Scope	Emission source	t CO ₂ -e
2	Electricity – terminals (including lounges)	9,575
2	Electricity - offices	3,698
2	Electricity - Hangars	2,665
2	Electricity – Simulator operations	1,284
3	Waste – in-flight and terminal	1,323
3	Waste – magazine production	1,748
3	Fuel – catering vehicles	1,218
3	Fuel – employee commute	8,074
3	Paper – Head office	74
Total Gross Emissions		3,583,686
GreenPower or retired LGCs		0
Total Net Emissions		3,583,686

4. Carbon offsets

Part A. Offsets summary

Overall passenger participation in the Fly Carbon Neutral program has been decreasing year on year. In FY16 we plan to increase uptake through increased marketing of the program and particularly the projects it supports.

In FY15, the most popular routes for offset uptake, with over 6% of tickets sold being offset, were the routes from Denpasar to/ from Port Hedland as well as Perth to Ravensthorpe. In terms of volume, Brisbane to/ from Sydney and Melbourne to/ from Sydney continue to be the largest offsets purchased, accounting for over 22% of total offsets.

Table 4. Offsets Summary

Offset type and registry	Year retired	Quantity	Serial numbers
VCU, Markit registry	2016	14,319	3357-150381978-150396296-VCU-016-MER-AU-14-1285-20102010-19102012-1
VCU, Markit registry	2016	14,711	3409-151930702-151945412-VCU-016-MER-AU-14-1285-20102010-19102012-1
VCU, Markit registry	2016	3,717	3357-150400406-150404122-VCU-016-MER-AU-14-1285-20102010-19102012-1

**Table 4. Offsets Summary**

Offset type and registry	Year retired	Quantity	Serial numbers
Total offsets retired			32,747
Emissions from carbon offset product			32,747
Net emissions			0
Total offsets held in surplus for future years: [include serial number batch]			30,095 (3357-150351883-150381977- VCU-016-MER-AU-14-1285-20102010- 19102012-1) 4,109 (3357-150396297-150400405- VCU-016-MER-AU-14-1285-20102010- 19102012-1)

Part B. Offsets purchasing and retirement strategy

Offsets are purchased throughout the year as they come available. They are retired upon completion of NCOS reporting to ensure the accuracy of offsets surrendered.

Part C. Offset projects (Co-benefits)

100% of our offsets purchased in the 2014/15 financial year are from the Tasmanian Land Conservancy – New Leaf Carbon Project.

From the Virgin Australia website – Virgin Australia guests offsetting their flights are directly supporting the preservation of Tasmania's native forests while also contributing to the protection of important species and ecosystems.

The Tasmanian Land Conservancy (TLC) is a science-based environmental organisation that protects land for biodiversity, applying business principles to achieving conservation outcomes. The TLC manages over 30,000 hectares of habitat for rare and threatened species, including the iconic Tasmanian devil and the magnificent Tasmanian wedge-tailed eagle. In partnership with the Save the Tasmanian Devil Program, the TLC has identified a special management zone where it will conduct intensive monitoring for Tasmanian devils in the wild.

The Tasmanian Land Conservancy's New Leaf Carbon Project directly reduces carbon dioxide entering the atmosphere by protecting approximately 12,000 hectares of native Tasmanian forest. Contiguous with the Tasmanian Wilderness World Heritage Area, it contains entire watersheds of pristine ecosystems and habitats.

When a forest is intact, the trees fix carbon dioxide from the air into their wood, and retain it for centuries. However, when forests are logged, most wood is processed into short-lived products like paper that end up in landfill, rotting and generating carbon dioxide.



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This New Leaf Carbon Project was established under the international Verified Carbon Standard to generate carbon credits using the VM10 methodology. TLC credits are also verified under the Climate, Community and Biodiversity standards and are recognised at the highest 'Gold Level', meaning that benefits flow to the community as well as wildlife, plants and their habitat.

The TLC are leading the way in establishing a comprehensive monitoring program that will see hundreds of permanent photo-monitoring sites strategically linked to a network of fauna monitoring stations that track our wildlife over time. Their vision is for the monitoring stations to be capable of sending real time information to scientists to interpret. Hundreds of acoustic sensors will remotely detect and identify birds, bats and frogs from their calls, providing vital information about the species that survive and thrive in these remote landscapes.

5. Have you done more?

We have been improving the quality of the underlying data relating to scope 3 emissions generated through waste and scope 2 emissions generated by electricity usage.

Terminal and in-flight waste – previously, these amounts have been captured and calculated separately. Through review of this process, it was noted that in-flight waste is captured within terminal waste figures. Therefore, we have removed the estimated in-flight waste calculation and replaced it with one waste estimate. To remain conservative, we have used our largest terminal (Brisbane) to estimate the total terminal and in-flight waste across our operations.

Terminal Electricity – previously, terminal electricity had been estimated based on Brisbane terminal figures. Due to improvements in data capture, we collected electricity data at all of our major terminals and, therefore, we've replaced estimates with actual data for electricity.