



An Australian Government Initiative


Public Disclosure Summary

Virgin Australia

1 July 2016 – 30 June 2017

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.

Robert Wood 
General Manager, Group Sustainability

Type of carbon neutral certification: [Virgin Australia Fly Carbon Neutral Program](#)

Verification

Date of most recent external verification/audit: 15 November 2016

Auditor: Ernst & Young

Auditor assurance statement link: *attached*



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 2016/17 financial year) within the network, which is then divided by the number of persons that travelled on these city pairs during that time, 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 Virgin Australia 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 carbon units 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 Life Cycle Assessment ('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.

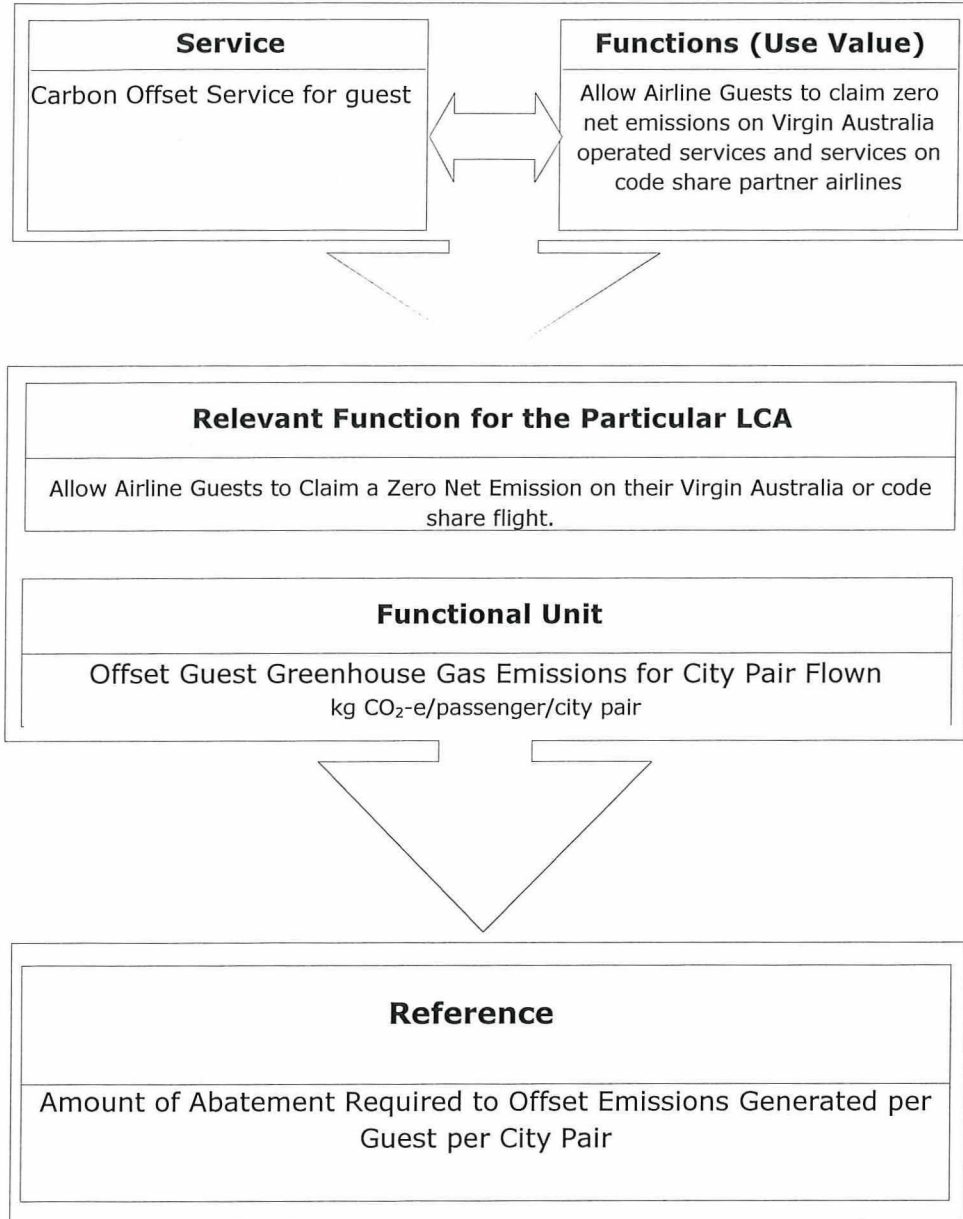


Figure 2 Program Function Overview

Emission sources within certification boundary

Quantified sources

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



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location. In the 2015/16 reporting year we expanded our methodology to include code share flights relating to our airline partners e.g. Delta, Air New Zealand, Etihad and Singapore Airlines, which will commence in the 2017/18 reporting year. Tigerair Australia has been included in the methodology in the 2016/17 reporting year. Offsets are being offered to customers, which commenced in the 2017/18 reporting year with city pair emissions calculated using 2016/17 data, consistent with Virgin Australia's historical approach.

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 uplift and fuel extraction and distribution losses.
- **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.

- Staff travel to/from work has not been included as emissions from commuting to the work will be minimal compared to the effort to gather this information and likely accuracy of the information.
- In-flight and terminal waste has not been included as the emissions from waste will be minimal compared to the effort to gather this information.
- Magazine production and waste has not been included as emissions from the production and waste (when not recycled) will be minimal compared to the effort to gather this information.
- Head office paper has not been included as emissions from the use of paper will be minimal compared to the effort to gather this information.
- Fuel used by external catering contractors has not been included as the emissions relating to diesel fuel use will be minimal compared to the effort to gather this information

Excluded Sources

The following emission sources have not been quantified in line with the provisions in the NCOS. These sources are outside of the control of Virgin Australia to influence products used or processes followed, which is the primary reason for their exclusion.

Aircraft manufacture – This is outside of the scope of our business practices and expertise. Data collection and allocation to specific aircraft would be complex and time consuming as we



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have both leased and owned aircraft. And we do not have access to any of the data related to their production.

Regulation providers – This is outside of the scope of our business practices and expertise. Details of the operation of the regulatory body and the proportion that would apply to Virgin Australia would be difficult to determine.

Air traffic management – This is outside of the scope of our business practices and expertise. Processes and procedures relating to the management of operations at air traffic management organisations are out of Virgin Australia’s control or influence to develop or change. Data relating to these operations are not available to Virgin Australia and would be complex to allocate to the aircraft.

Passenger travel to/from airport – similar to staff travel above, it is even more difficult to know how a particular passenger travelled to/ from the airport and the distance they travelled to/from the airport to allow for an accurate estimate of emissions.

Jet fuel production – This is outside of the scope of our business practices and expertise. Processes and procedures relating to the production of jet fuel are out of Virgin Australia’s control or influence to develop or change. Data relating to these operations are not available to Virgin Australia and would be complex to allocate to the aircraft.

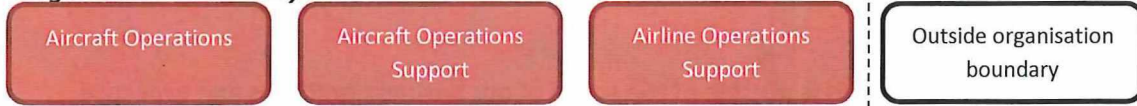
Figure 3, below, illustrates the emissions that are within our boundary and indicate whether they are quantified or non-quantified sources.



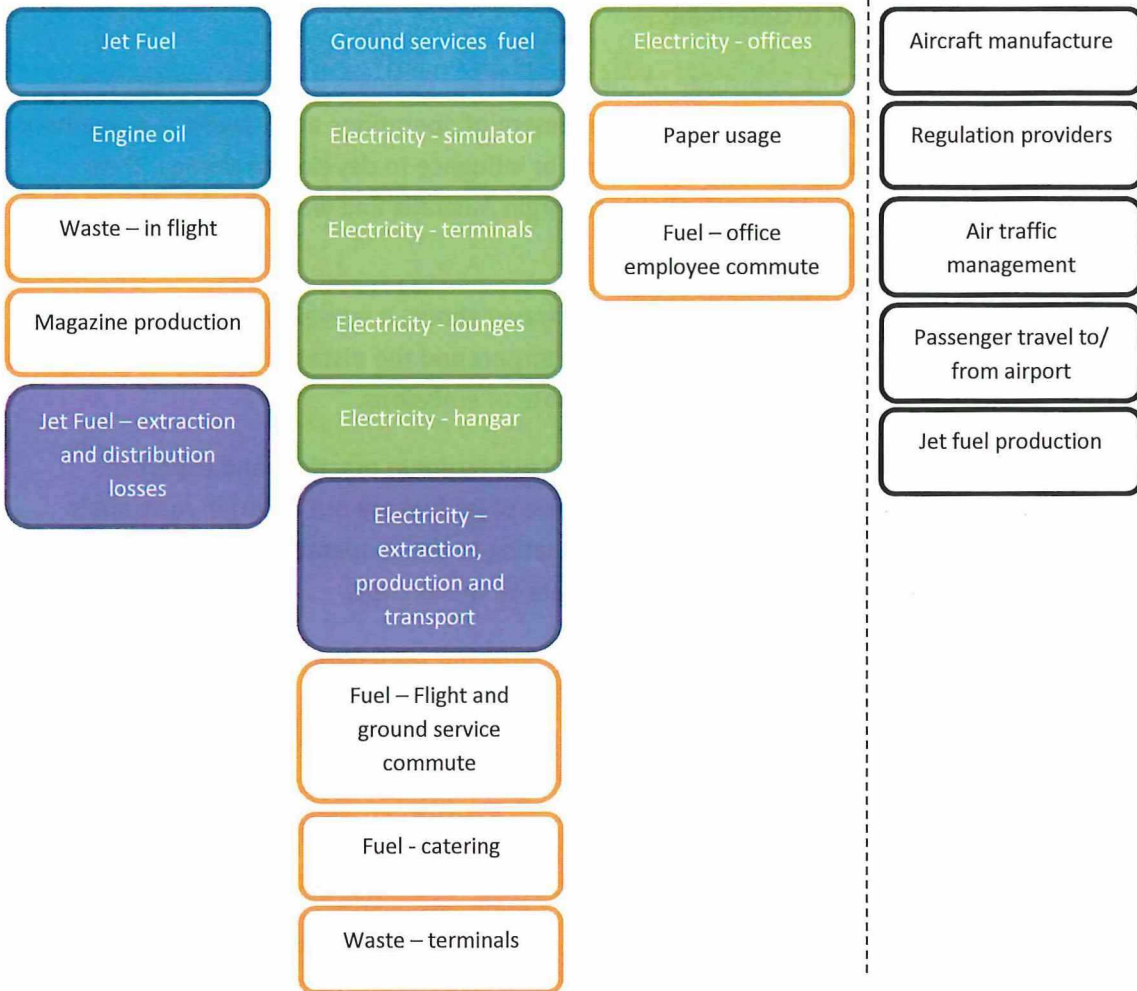
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Organisation Boundary



Emission sources





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Figure 3 Emissions overview

2. Emissions reduction measures

Part A. Emissions over time

Over time, total emissions for Virgin Australia have been

	Base Year (2010/11)	2013/14	2014/15	2015/16	2016/17
Scope 1	2,976,751	3,312,365	3,302,763	3,342,041	3,392,211
Scope 2	14,735	39,392	17,222	17,893	18,908
Scope 3		263,938	284,545	171,388	173,972
Total	2,991,486 tCO ₂ -e	3,615,695 tCO ₂ -e	3,604,530 tCO ₂ -e	3,531,322 tCO ₂ -e	3,585,091 tCO ₂ -e

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

Year	Carbon Offset (t)
2011/12	65,971
2012/13	49,644
2013/14	38,653
2014/15	32,747
2015/16	29,949
2016/17	29,110

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, sustainable alternative fuels and carbon offsetting.

The combustion of 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



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pilots and data analysts, whose role it is to continually investigate and implement fuel efficiency improvements. This has been focussed on process and procedural improvements to eliminate unnecessary fuel burn. There has also been focus on reducing the weight of the cabin by removing unnecessary items.

Virgin Australia is also working toward incorporating sustainable aviation fuels into fuel purchasing from 2020, in line with our aspirational target to use 5% biofuels by 2020. Sustainable aviation fuels not only have a smaller carbon footprint but also burn more efficiently than regular jet fuel, which will 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**: We continue to focus on maintaining a young fleet, which allows us to benefit from technological advancements made by manufacturers in improving the fleet efficiency. Our 5-year fleet plan continues to keep this as a key focus for the airline.
- **Fuel Efficiency**: Virgin Australia's fuel efficiency team have implemented a range of initiatives throughout the year resulting in 4.9 million litres of fuel saved.
- **Sustainable Aviation Fuel**. In partnership with Air New Zealand in March 2016 Virgin Australia issued an RFI to procure 200 million litres of sustainable aviation fuel each year for a period of 10 years, starting in 2020. In October 2017 we commenced a project in partnership with the Queensland Government, Brisbane Airport Corporation and a sustainable fuel supplier to test the logistics of getting these fuels into the fuel infrastructure at Brisbane Airport. We continue to be an active member of the Sustainable Aviation Fuel User Group and participate in international discussions with ICAO on analysing the methodology for assessing the lifecycle carbon reduction of different alternative fuel production processes.



3. Emissions summary

Scope	Emission source	t CO ₂ -e
1	Aviation Fuel	3,370,510
1	ULP	75
1	Diesel	2,496
1	Kerosene	65
1	Engine oil	74
1	Kerosene – maintenance	2,329
1	Kerosene – charter flights	14,474
1	Kerosene – repositioning flights	2,192
2	Electricity – terminals (including lounges)	13,456
2	Electricity – offices	1,968
2	Electricity – Hangars	2,322
2	Electricity – Simulator operation	1,162
3	Aviation fuel – extraction and production	172,822
3	ULP – extraction and production	4
3	Diesel – extraction and production	128
3	Kerosene – extraction	3
3	Engine oil – extraction and production	19
3	Kerosene – maintenance – extraction and production	119
3	Kerosene – charter flights – extraction and production	742
3	Kerosene – repositioning flights – extraction and production	112
3	Electricity – terminals (including lounges)	15
3	Electricity – offices	2
3	Electricity – Hangars	3
3	Electricity – Simulator operation	1
Total Gross Emissions		3,585,091
GreenPower or retired LGCs		0
Total Net Emissions		3,585,091

4. Carbon offsets

Part A. Offsets summary

Overall passenger participation in the Fly Carbon Neutral program has been relatively steady year on year. In FY18 we plan to increase uptake through further expansion of the program and continued marketing of the projects it supports.

In FY17, the most popular routes for offset uptake, with over 2.5% of tickets sold, were between Ballina and Sydney with 3.5% and 3.9% uptake in each direction. Hobart to Sydney and Coffs Harbour to Sydney were also popular with 2.5% each. In terms of volume, MEL-SYD



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and SYD-MEL as well as BNE-SYD and SYD-BNE continue to be the largest offsets purchased accounting for 22% of total offsets and 4,489t CO₂-e offset.

As noted in Table 3 above, the total net emissions for the Virgin Australia Group in FY17 were 3,585,091 tCO₂-e. In FY17, as Table 4 indicates, our customers offset total emissions of 29,110 tCO₂-e. Also listed below in Table 4 are the specific tCO₂-e that were surrendered as required to meet the 29,110 tCO₂-e.

Table 4. Offsets Summary			
Offset type and registry	Year retired	Quantity	Serial numbers
VCU, Markit registry	2017	4,255	3357-150351883-150381977-VCU-016-MER-AU-14-1285-20102010-19102012-1
KACCU, ANREU	2017	15,236	3,741,455,808 – 3,741,471,043
KACCU, ANREU	2017	9,619	3,741,471,044 – 3,741,480,662
Total offsets retired			29,110
Emissions from carbon offset product			29,110
Net emissions			0
Total offsets held in surplus for future years:			ANREU Account – 5,616 KACCU 3,741,480,663 – 3,741,486,278

Part B. Offsets purchasing and retirement strategy

Offsets are purchased throughout the year as required. 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 2016/17 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



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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.

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?

Virgin Australia has continued to improve our data collection processes for reporting to ensure the most accurate data is captured.