Virgin Australia Holdings

1 July 2018 – 30 June 2019

Declaration

To the best of my knowledge, the information provided in this Public Disclosure Statement is true and correct and meets the requirements of the Climate Active Carbon Neutral Standard.

Andrew Sellick

General Manager, Sustainability and Corporate Responsibility

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

Verification

Date of most recent external verification/audit: 12 Feb 2020

Auditor: Point Advisory

Auditor assurance statement link: *attached*

1. Carbon Neutral Information

Introduction

Aviation has made our world significantly more accessible. In FY19, Virgin Australia Holdings enabled over 25 million passengers to connect with their world – with friends and family, with colleagues and communities, with destinations familiar and new.

As our industry has grown, so too has its impact on the environment. Virgin Australia Holdings is passionate about being a force for good, creating positive and impactful change for people and planet. Environmental custodianship is a critical and increasingly important consideration in our operations, with our opt-in Fly Carbon Neutral Program offered by both Virgin Australia and Tigerair Australia being one way that we are minimising the impact we have on our planet.

Service

Our program allows passengers flying with each airline to offset the emissions attributable to their seat when booking their flight. Since introducing the world's first Government certified airline offset program in 2007, over four million of our passengers have chosen to offset their travels, equating to over 540,000 tonnes of carbon emissions neutralised.

Greenhouse gas emissions are calculated per city pair flown in the previous twelve months (the 2018/19 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 (freight emissions are not covered as the service only applies to passenger transportation). 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 Holdings defines a carbon price for the offset period and purchases offsets to achieve this price. Offsets are then surrendered by Virgin Australia Holdings after the fact.

Figure 1, below illustrates the general Fly Carbon Neutral Program operated by Virgin Australia Holdings. 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 defined.

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 CO_2-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 service with another. The Virgin

Australia Holdings 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 Holdings and the Department of Environment only. They will not 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.

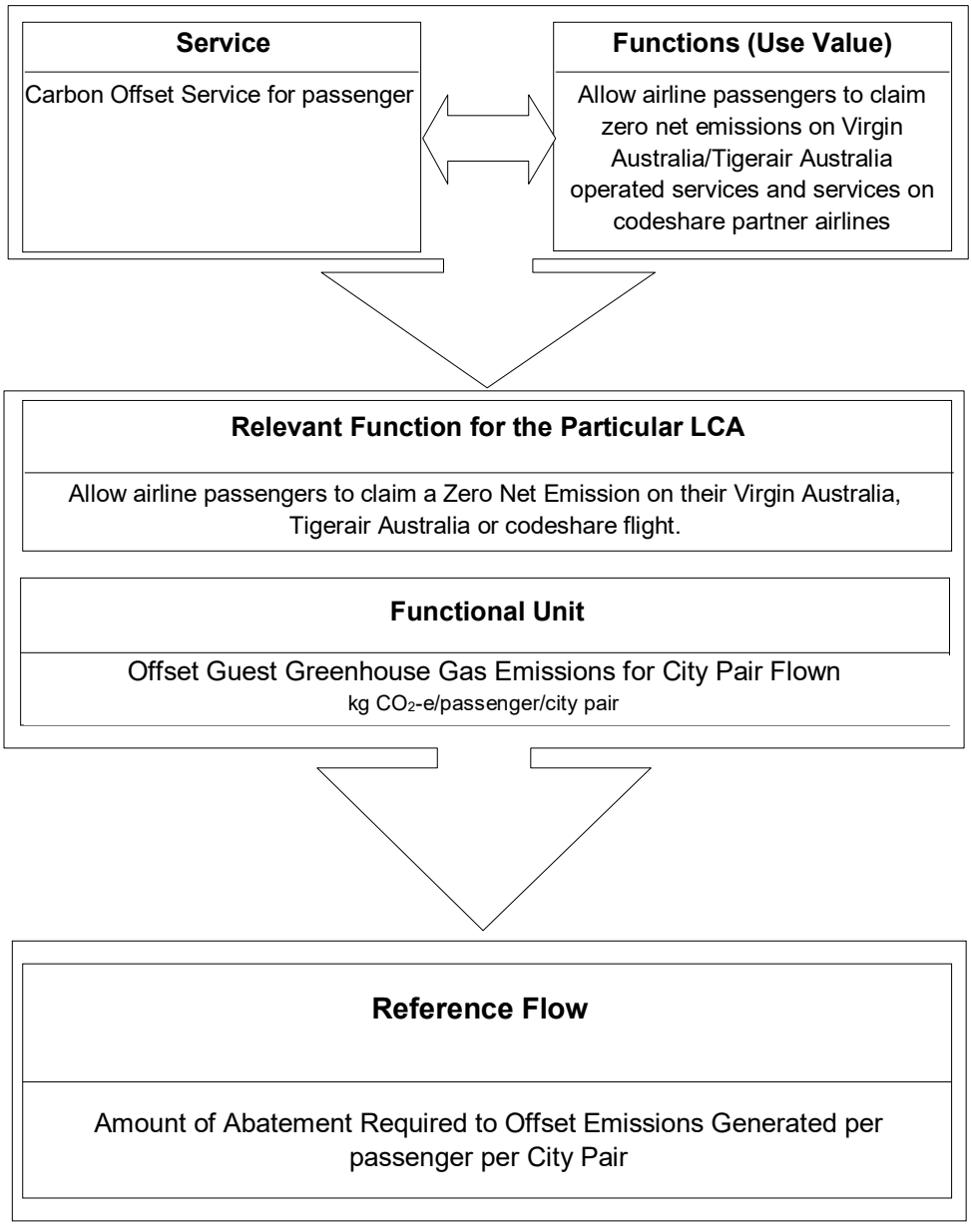

Figure 2 Program Function Overview

Emission Sources within Certification Boundary

Quantified Sources

The LCA applies to the operation of aircraft operated by Virgin Australia Holdings aircraft (domestic and international) including Virgin Australia Regional Airlines and Tigerair Australia regardless of location.

In the 2015/16 reporting year we expanded our methodology to include codeshare flights relating to our airline partners. This commenced in the 2018/19 reporting year for codeshare partner Alliance Airlines and we will expand this in the 2019/20 reporting year to cover all codeshare flights.

In FY19 The Group conducted an emissions boundary review with key changes being:

- Emissions from dedicated freighter aircraft has been classified outside the emissions boundary, as the Climate Active certification only applies to passenger transportation.
- Emissions related to flying conducted by third party operators on behalf of Virgin Australia Group through ACMI [Aircraft, Crew, Maintenance and Insurance] agreements have been classified as Scope 3 emissions, as while attributed to The Group, do not fall under operational control. Scope 3 ACMI emissions include both emissions from both fuel burn and fuel extraction/distribution losses.

There are three main areas of the Virgin Australia Holdings' 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.

Across these areas, the following emissions sources are quantified

- Kerosene: Scope 1 & 3
- Diesel: Scope 1 & 3
- Petroleum based oils: Scope 1 and 3
- Gasoline: Scope 1 & 3
- Electricity: Scope 2 & 3

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.

Emission Source	Details
Waste generated in operations	Data and proxy gaps exist. Virgin Australia Holdings is currently working with its supply chain partners to address reporting challenges with a view to reporting on waste in future periods should emissions be material.
Electricity – Airport premises	Data and proxy gaps exist. Due to airport access arrangements, electricity data for many airport sites are not received and site variances limit extrapolation. Total emissions are not estimated to be material.
Fuel and energy related activities	Data and proxy gaps exist regarding fuel used by external contractors in their servicing of Virgin Australia Holdings aircraft, and contractor variances limit extrapolation. Total emissions are not estimated to be material.

Non-Applicable Sources

The company notes that as no aircraft were acquired in the reporting year, there were no applicable scope 3 emissions related to the production of capital goods.

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

Emission sources

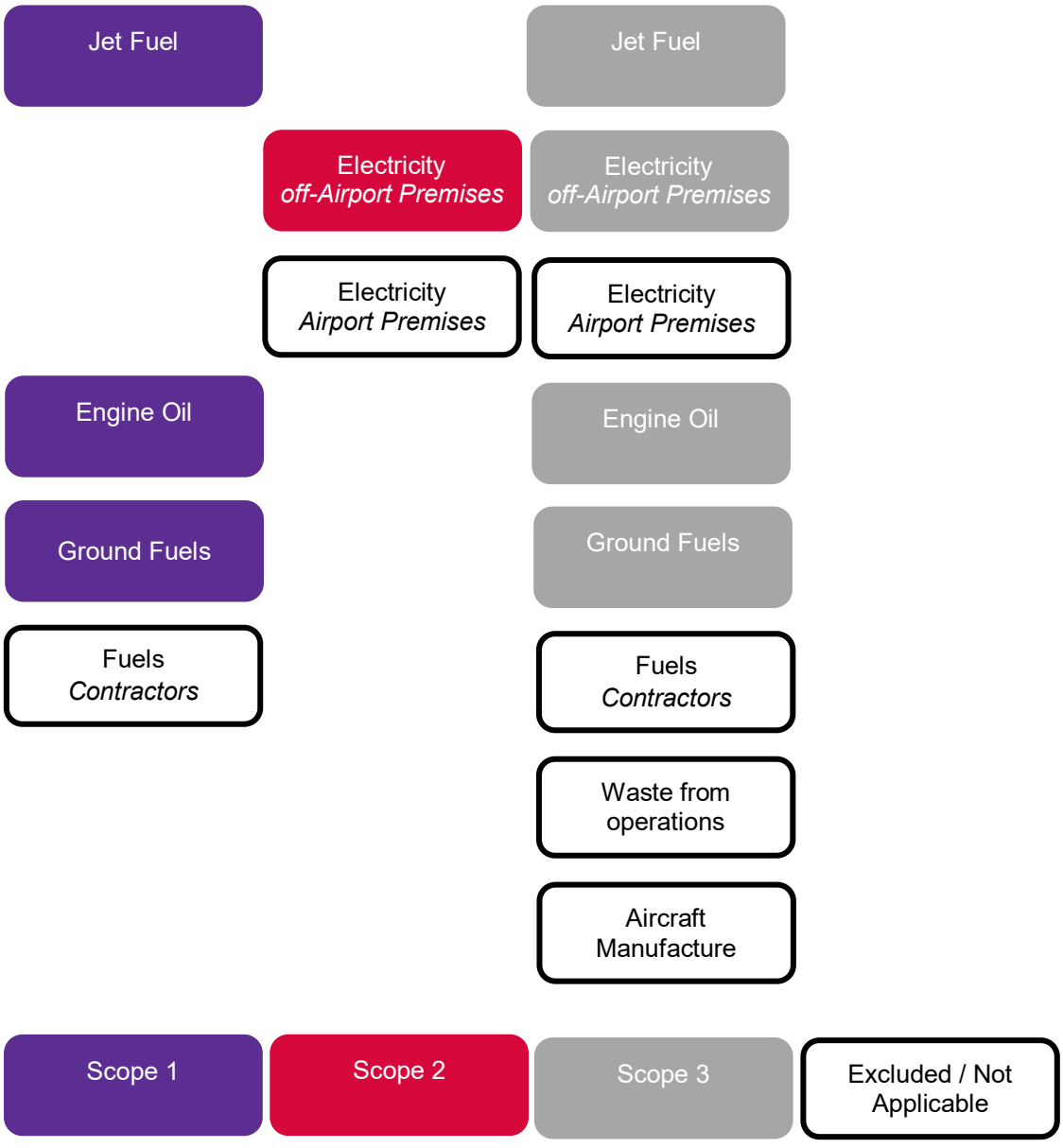

Figure 3 Emissions overview

2. Emissions Reduction Measures

Part A. Emissions over time

Virgin Australia

Table 1. Virgin Australia emissions since base year

	Base Year (2010/11)	2017/18	2018/19
Scope 1	2,976,751	3,479,712	3,603,786
Scope 2	14,735	19,410	4,843
Scope 3		178,652	256,142
Total	2,991,486 tCO_2-e	3,677,773 tCO_2-e	3,864,771 tCO_2-e

Tigerair Australia

Table 2. Tigerair Australia emissions since base year

	Base Year 2016/17	2017/18	2018/19
Scope 1	462,516	461,682	417,251
Scope 2	79	79	91
Scope 3	23,214	23,673	21,857
Total	485,809 tCO_2-e	485,434 tCO_2-e	439,198 tCO_2-e

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

Table 3. Carbon offsets purchased

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
2017/18	27,406
2018/19	26,969

Emissions for Tiger Airways Australia's opt-in service: Carbon neutral flight services

Table 4. Carbon offsets purchased	
Year	Carbon Offset (t)
2017/18	4,804^
2018/19	4,411

^ FY18 emissions reported for Tigerair Australia were based on all *purchases* over the reporting period rather than purchases for flights *operated* in the reporting period. The FY19 figured has been revised down from 5,771 tCO2 to 4,804 tCO2 accordingly.

Part B. Emissions reduction strategy

Virgin Australia Holdings 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 Holdings has staff continually investigating and implementing fuel efficiency improvements, focusing on process and procedural improvements to eliminate unnecessary fuel burn. There has also been a focus on reducing the weight of the cabin by removing unnecessary items.

Virgin Australia Holdings is also working towards incorporating sustainable aviation fuels into fuel purchasing, with such fuels having a smaller carbon footprint and burning more efficiently than regular jet fuel. In FY19, Virgin Australia Holdings facilitated the delivery of four shipments of low-carbon aviation fuel into the Port of Brisbane, which was then blended with traditional jet fuel and supplied into the general fuel supply system at Brisbane Airport. This was the first time in Australia that sustainable aviation fuel had been incorporated into the regular airport fuelling infrastructure. During the trial, more than 700 aircraft operating in and out of Brisbane Airport flew more than one million kilometres using the sustainable aviation fuel blend.

Complementing the two initiatives above, we use carbon offsets to cover those emissions from passengers who choose to offset the emissions generated through their travel. In FY19, Virgin Australia Holdings expanded its offsetting initiative to cover its first codeshare partner, and in the coming year, it plans to expand the program further.

Part C. Emissions reduction actions

Fleet renewal

We continue to focus managing the age of our fleet, which allows us to benefit from technological advancements made by manufacturers in improving the fleet efficiency. In the coming year, we will retire three aging F100 aircraft from our regional operations.

Fuel Efficiency
Fuel saving initiatives launched in FY19 delivered a reduction in emissions by 6,370 tCO2-e. To date, the Fuel Efficiency program has delivered 63 initiatives, realising a combined saving of over 12.5 million litres of fuel per annum, with another 36 initiatives underway.

Sustainable Aviation Fuel.
In October 2017, Virgin Australia Holdings commenced a project in partnership with the Queensland Government, Brisbane Airport Corporation, US-based biofuel producer Gevo, Inc. and supply chain partners Caltex and DB Schenker to test the logistics of getting these fuels into the fuel infrastructure at Brisbane Airport. Having successfully completed the trial and established supply chain readiness, we continue to actively engage with potential producers, government and industry bodies in order to support the production and use of low carbon sustainable fuels in Queensland and across Australia.

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

Virgin Australia

Table 5. Emissions Summary

Scope	Emission source	t CO_2-e
1	Aviation Fuel	3,601,368
1	ULP	70
1	Diesel	2117
1	Kerosene	151
1	Engine oil	80
2	Electricity – off-Airport Premises	4,843
3	Aviation Fuel	67,858
3	Aviation fuel – extraction and production	188,139
3	ULP – extraction and production	4
3	Diesel – extraction and production	109
3	Kerosene – extraction	8
3	Engine oil – extraction and production	21
3	Electricity – off-Airport Premises	5
Total Gross Emissions		3,864,771
GreenPower or retired LGCs		0
Total Net Emissions		3,864,771

Tigerair Australia

Table 6. Emissions Summary

Scope	Emission source	t CO_2-e
1	Aviation Fuel	417,245
1	ULP	4
1	Diesel	0
1	Kerosene	0
1	Engine oil	2
2	Electricity – terminals	91
3	Aviation Fuel (ACMI)	439
3	Aviation fuel – extraction and production	21,417
3	ULP – extraction and production	0.22
3	Diesel – extraction and production	0
3	Kerosene – extraction	0
3	Engine oil – extraction and production	0.43
3	Electricity – offices	0
Total Gross Emissions		439,198 tCO_2-e
GreenPower or retired LGCs		0

Table 6. Emissions Summary		
Scope	Emission source	t CO_2-e
Total Net Emissions		439,198 tCO_2-e

4. Carbon offsets

Part A. Offsets summary

Virgin Australia

Overall passenger participation in the Fly Carbon Neutral Program has been relatively steady year-on-year. In FY19, the most popular routes offset were for flights operating between:

- Sydney and Ballina
- Adelaide and Canberra
- Hobart and Sydney

Overall volumes continue to be seen in the major routes between Brisbane, Sydney and Melbourne with 27% of the volume of offsets purchased.

As noted in Table 5 above, the total net emissions for Virgin Australia in FY19 were 3,864,771 tCO_2-e. In FY19, as Table 7 indicates, our customers offset total emissions of 26,969 tCO_2-e. Also listed below in Table 7 are the specific tCO_2-e that were surrendered as required to meet the 26,969 tCO_2-e.

As we strive to boost awareness with the travelling public around the importance of carbon offsetting, we are hopeful that the number of flights being offset by our guests will remain on a positive trajectory. Moving forward, we remain committed to improving the carbon offsetting opportunities for our guests as well as the transparency around the program. Most importantly, our focus remains on reducing our emissions profile and helping to establish a sustainable aviation fuel industry.

Table 7. Offsets Summary – Virgin Australia

Offset type and registry	Project	Year retired	Vintage	Quantity	Serial numbers
KACCU/ANREU	Biodiverse Carbon Conservation Morella, South Australia	2020	2018-19	8720	3,773,286,199 - 3,773,294,918
KACCU/ANREU	Tasmanian Land Conservancy New Leaf Carbon Project	2020	2016-17	5868	3,759,747,996 – 3,759,753,863
KACCU/ANREU	Tasmanian Land Conservancy New Leaf Carbon Project	2020	2018-19	6440	3,781,571,926 – 3,781,578,365

Table 7. Offsets Summary – Virgin Australia

Offset type and registry	Project	Year retired	Vintage	Quantity	Serial numbers
APX VCS Registry Verified Carbon Units	Katingan Peatland Restoration and Conservation Project	2020	2015-16	5668	5995-271847548-271853215-VCU-016-APX-ID-14-1477-01112015-31122016-1
KACCU/ANREU	South East Arnhem Land Fire Abatement Project	2021	2016-17	273	3,752,462,279 - 3,752,462,551
	Total offsets retired				26,969
	Emissions from carbon offset service				26,969
	Net emissions				0
	Total offsets held in surplus for future years:		ANREU Account (KACCU's) 3,781,578,366 – 3,781,585,800		

Tiger Airways Australia

Overall participation in the Fly Carbon Neutral Program had a successful second year of operations. In FY19, the most popular routes offset were for flights operating between:

- Townsville and Melbourne
- Canberra and Melbourne
- Sydney and Coffs Harbour

Overall volumes continue to be seen in the major routes between Brisbane, Sydney and Melbourne with 40% of the volume of offsets purchased.

It was discovered that FY18 emissions reported for Tigerair Australia were based on purchases over the reporting period rather than uplifted passengers. This resulted in surrendering 967 tCO_2-e beyond the requirements. FY19 offsetting has been adjusted downwards by 967 tCO_2-e to reconcile the figures.

As noted in Table 6 above, the total net emissions for Tiger Airways Australia in FY19 were 439, 204 tCO_2-e. In FY19, as Table 8 indicates, our customers offset total emissions of 4,111 tCO_2-e. Also listed below in Table 8 are the specific tCO_2-e that were surrendered as required to meet the 3,445 tCO_2-e, which adjusted the 4,111 tCO_2-e down by 967 tCO_2-e.

Table 8. Offsets Summary

Offset type and registry	Project	Year retired	Vintage	Quantity	Serial numbers
KACCU, ANREU	South East Arnhem Land Fire Abatement Project	2020	2017-18	2500	3,768,457,721 - 3,768,460,220

Table 8. Offsets Summary

Offset type and registry	Project	Year retired	Vintage	Quantity	Serial numbers
KACCU, ANREU	South East Arnhem Land Fire Abatement Project	2020	2017-18	945	3,770,370,495 – 3,770,371,439
	Total offsets retired				3,445
	Emissions from carbon offset service				4,411
	Net emissions				
	Total offsets held in surplus for future years:				ANREU Account (KACCUs): 3,770-371,440 – 3,770,372,994 3,770,372,995 – 3,770,375,494 3,770,375,495 – 3,770,377,994 3,752,462,279 – 3,752,464,007 3,752,464,008 – 3,752,466,507

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)

Tasmanian land Conservancy – New Leaf Carbon Project
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.

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.

Greening Australia
Virgin Australia also supports the work of Greening Australia, including their carbon offsetting project in South Australia.

Every year, tens of thousands of migratory shorebirds from countries including Russia, China and Japan make the arduous journey across the Pacific Ocean to feed and shelter in water bodies across South Australia. Greening Australia are enhancing over 1,075 hectares of revegetated land across four South Australian Government conservation reserves and one privately owned property in the Murray Darling Basin to create a habitat for these internationally important migratory shorebirds and other threatened wildlife.

In addition to significant carbon and environmental impacts, the program brings a multitude of economic and social benefits to local communities across South Australia such as improving soil and water quality, and decreasing salinity.

South East Arnhem Land Fire Abatement (SEALFA)
With the introduction of Tiger Airways Australia's Fly Carbon Neutral service, we also support the South East Arnhem Land Fire Abatement project in Northern Australia, which uses strategic fire management activities to reduce the fire-generated emissions of greenhouse gas.

The area SEALFA operate in (called SEAL IPA), is managed by the Northern Land Council (NLC) which also manages the Numbulwar Numburindi and Yugul Mangi Rangers. These two Indigenous ranger groups, consisting of Traditional custodians and their families, annually implement a coordinated program of strategic early dry season burning throughout the project area.

In 2016, 15 Indigenous rangers were employed to undertake fire management within the South East Arnhem Land Indigenous Protected Area (IPA). The SEAL IPA encompasses more than 19,000 km2 of Aboriginal freehold land within the Arnhem Land and Urapunga Aboriginal Land Trusts, and is dedicated by its Traditional Aboriginal Owners as an IUCN Category VI Managed Resource Protected Area.

Their fire management plan comprised a combination of aerial prescribed burning (incendiary pellets dropped from helicopters) and finer-scale ground burning to establish a mosaic of cool burns around and within the project area. In 2016, the first year fully operating their fire project, the Numbulwar Numburindi and Yugul Mangi Rangers achieved an outstanding abatement result, reducing their baseline emissions by more than 80%. Wildfires account for 3-4% of Australia's greenhouse gas emissions, and your contribution will help Indigenous fire managers minimise this by reinstating traditional burning practices.