PUBLIC DISCLOSURE STATEMENT

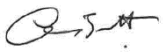
VIRGIN AUSTRALIA HOLDINGS

SERVICE CERTIFICATION
FY2021–22

Australian Government

Climate Active
Public Disclosure Statement

An Australian Government Initiative

NAME OF CERTIFIED ENTITY	Virgin Australia Holdings
REPORTING PERIOD	Financial year 1 July 2021 – 30 June 2022 Arrears report
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.*  Christian Bennett Chief Corporate Affairs & Sustainability Officer 27 April 2023

Australian Government
Department of Climate Change, Energy, the Environment and Water

Version March 2022.

1. CERTIFICATION SUMMARY

TOTAL EMISSIONS OFFSET	24,542 tCO_2-e
OFFSETS BOUGHT	45% ACCUs, 49% CERs, 7% VERs
RENEWABLE ELECTRICITY	N/A – location-based approach
TECHNICAL ASSESSMENT	30/01/2023 James Koerbin Earthed Consulting Next technical assessment due: FY25

Contents

2. CARBON NEUTRAL INFORMATION

Description of certification

The Virgin Australia *Fly Carbon Neutral* program allows passengers to offset the carbon emissions attributable to their flight with Virgin Australia.

Service description

The *Fly Carbon Neutral program is* an opt-in service, covering the cradle-to-gate emissions of travel.

The functional unit is $kgCO_2$-e per revenue passenger-km (RPK).

Greenhouse gas emissions are calculated per city pair flown in the previous twelve months within the network, which is then divided by the number of passengers 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). 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 which is applied to the emissions per passenger for each route. It then procures carbon credits after the period has ended to achieve the actual cost of carbon per tonne collected from passengers.

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 CO_2-e is defined.

”Delivering net zero by 2050 will require a mix of actions with regards to alternative fuels, aircraft technology, fleet and engine renewal, working with our partners, using smarter ground vehicles and carbon offsets. Thus, the ‘Fly Carbon Neutral program’ plays a critical role in our decarbonisation journey.”

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

3. EMISSIONS BOUNDARY

Inside the emissions boundary

All emission sources listed in the emissions boundary are part of the carbon neutral claim.

Quantified emissions have been assessed as 'attributable processes' that become the product, make the product and carry the product through its life cycle. These have been quantified in the carbon inventory.

Non-quantified emissions have been assessed as attributable and are captured within the emissions boundary, but are not measured (quantified) in the carbon inventory. All material emissions are accounted for through an uplift factor. Further detail is available at Appendix C.

Outside the emissions boundary

Non-attributable emissions have been assessed as not attributable to a product or service. They can be **optionally included** in the emissions boundary and therefore have been offset, or they can be listed as outside of the emissions boundary (and are therefore not part of the carbon neutral claim). Further detail is available at Appendix D.

Inside emissions boundary

Quantified

Kerosene

Diesel

Gasoline

Petroleum based oils

Electricity

Waste

Hotel accommodation

Crew transport

Catering

Cleaning

Non-quantified

Water / Wastewater

Refrigerants

Embodied emissions

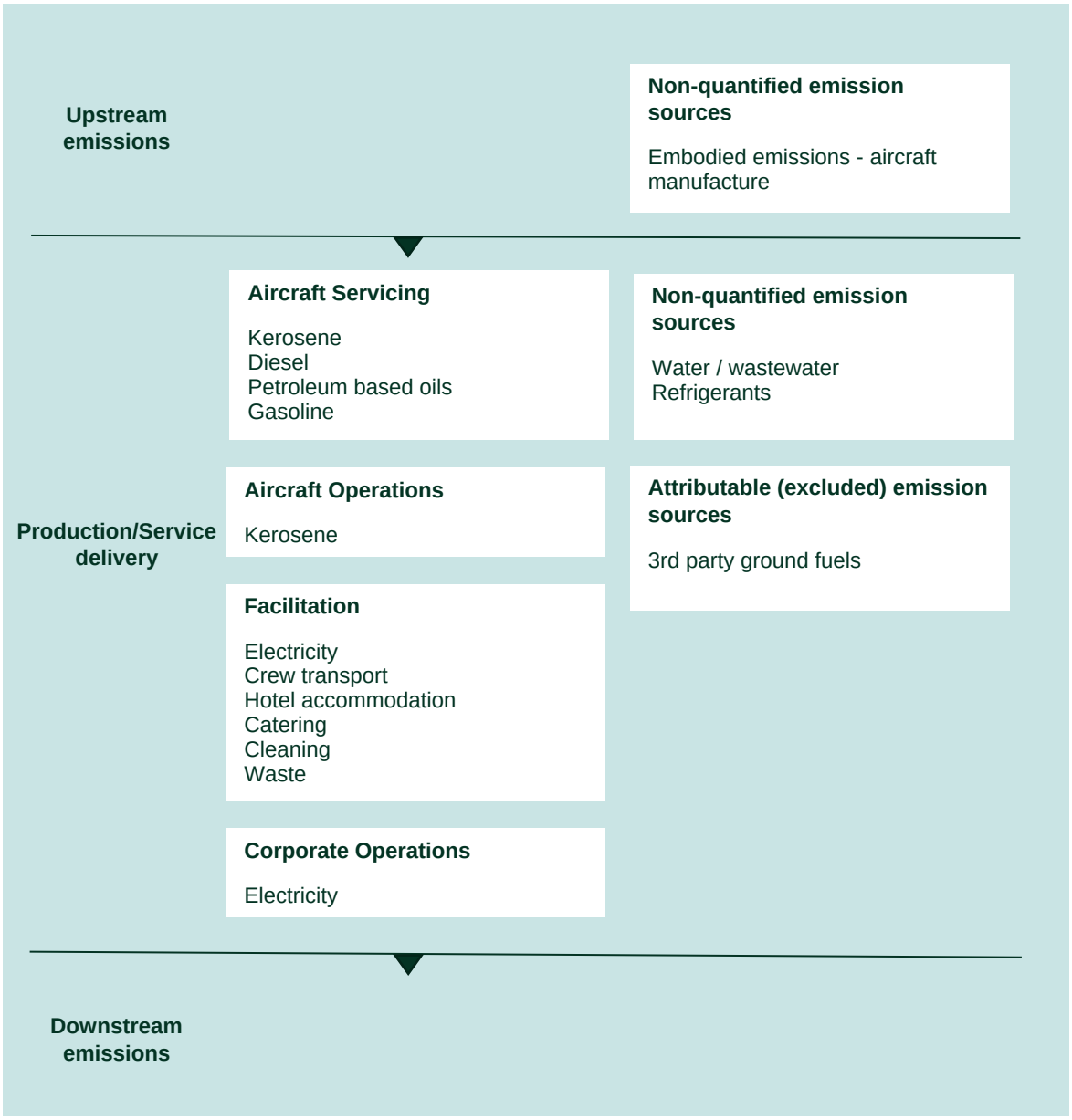
Attributable (excluded)

Ground fuels - third party ground handling agents using non-VA equipment

Outside emission boundary

Non-attributable

Service process diagram



Data management plan for non-quantified sources

There are no non-quantified sources in the emission boundary that require a data management plan.

4. EMISSIONS REDUCTIONS

Emissions reduction strategy

Virgin Australia recognises aviation has a significant role to play in reducing global emissions and protecting the environment and our futures. In line with the International Air Transport Association (IATA), in November 2021, we committed to a target of Net Zero Emissions (NZE) by 2050.

Our NZE commitment aligns with the Paris Agreement goal to limit global warming to 1.5 degrees Celsius or well below 2 degrees Celsius - the level considered necessary to reduce the most severe impacts of climate change. This target complements our existing support of IATA's carbon-neutral growth of international aviation from 2020, facilitated through our participation in the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA).

Heading into FY23, we will build our climate and decarbonisation ambition. This ambition will incorporate our existing 2050 commitment alongside an additional interim 2030 target, which will be published in our FY23 Climate Active Report.

Emissions reduction actions

Fleet renewal and efficiency program

We understand that operating an efficient aircraft fleet is critical to driving our emissions intensity as low as possible. Newer aircraft burn fuel more efficiently and play an important part in our journey to achieving our NZE target.

In April 2022, Virgin Australia Group announced the latest step in its fleet transformation. This program will include:

- Eight Boeing 737-8 aircraft scheduled to enter service, starting in Q4 FY23. These aircraft produce ~15 per cent lower emissions than the current fleet of 737-800 aircraft.
- Replacement of the ageing F100 fleet with more fuel-efficient 737-700 aircraft, which can accommodate more passengers using a similar amount of fuel. This is expected to reduce emissions by ~30 per cent per seat per trip.
- 25 Boeing 737-10s scheduled to join our fleet from 2024, which will reduce emissions by 17 per cent per seat per trip compared to 737 NG aircraft.

Fuel Efficiency

Virgin Australia's fuel efficiency working group has introduced over 70 initiatives since launched, generating year-on-year fuel efficiency savings. As we return to the skies, our program to optimise fuel uplift has recommenced. In FY2022, Single Engine Taxi and Removal of Hard Copy Manuals resulted in savings of over 400,000 litres of jet fuel over the year.

Sustainable Aviation Fuels (SAF)

SAF derived from biomass (plants, trees, algae, waste and other organic matter bio-oils) offer the single largest opportunity to reduce emissions for airlines in the medium term. In October 2017, Virgin Australia 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 support industry advocacy efforts by engaging with government, airline partners, aircraft manufacture and membership of the Bioenergy Australia - Sustainable Aviation Fuels Alliance of Australia and New Zealand (SAFAANZ) - a group of industry players focused on accelerating the development, commercialisation, education and policy development of SAF.

5. EMISSIONS SUMMARY

Emissions over time

Emissions since base year			
		Total tCO_2-e	Emissions intensity of the functional unit
Base year:	2010–11	2,991,486	
Year 1:	2011–12	3,240,251	
Year 2:	2012–13	3,394,284	
Year 3:	2013–14	3,615,695	
Year 4:	2014–15	3,604,530	
Year 5:	2015–16	3,531,322	
Year 6:	2016–17	3,585,091	
Year 7:	2017–18	3,677,847	
Year 8:	2018–19	3,864,771	
Year 9:	2019–20	2,831,798	0.1053
Year 10:	2020–21	913,735	0.0993
Year 11:	2021–22	1,465,083	0.0991

Significant changes in emissions

Virgin Australia continued to be challenged by the impacts of COVID-19 during the reporting period.

New South Wales and Victoria were in extended periods of lockdown until mid-October 2021, resulting in significant impacts to domestic capacity and resulted in a decrease in our scheduled operations. Furthermore, significant Omicron outbreaks across Australia impacted demand in early 2022, with travel demand suppressed again until the Easter holidays in April 2022.

As passenger volumes continue to recover, emissions have increased year/year.

Emission source	Current year (tCO_2-e)	Previous year (tCO_2-e)	Reason for change
Fuel: Kerosene - aircraft	1,405,123.750	910,513.007	COVID-19 recovery

Use of Climate Active carbon neutral products and services

N/A

Service emissions summary

Scope	Details	tonnes CO_2-e
1	Aircraft Kerosene - Carrier Fuel	1,304,013.4
1	Petrol/Gasoline	22.4
1	Diesel oil	918.9
1	Kerosene	15.8
1	Petroleum based oils	37.6
2	Electricity	6,374
3	Aircraft Kerosene - ACMI Fuel	32,577.0
3	Aircraft Kerosene - Carrier Fuel [extraction & production]	66,863.0
3	Aircraft Kerosene - ACMI Fuel [extraction & production]	1,670.4
3	Petrol/Gasoline [extraction & production]	1.2
3	Diesel oil [extraction & production]	47.1
3	Kerosene [extraction & production]	0.8
3	Petroleum based oils [extraction & production]	9.7
3	Electricity distribution	757
3	Electricity - international outstations	2.2
3	Waste	6,345.6
3	Crew transport	1,626.3
3	Hotel accommodation	4,210.4
3	Catering	39,423.4
3	Cleaning	166.9
	Total	**1,465,083**

Emissions intensity per functional unit (kgCO_2-e/RPK)	**0.09917**
Number of functional units to be offset (RPK)	**247,478,602**
Total emissions to be offset (tCO_2-e)	**24,542**

6. CARBON OFFSETS

Offsets retirement approach

In arrears	
1. Total number of eligible offsets banked from last year's report	1,607
2. Total emissions footprint to offset for this report (tCO_2-e)	24,542
3. Total eligible offsets required for this report	22,935
4. Total eligible offsets purchased and retired for this report	22,935
5. Total eligible offsets banked to use toward next year's report	0

Co-benefits

Project co-benefits include:	
New Leaf Project	The Tasmanian Land Conservancy (TLC) manages over 30,000 hectares of habitat for rare and threatened species, including the Tasmanian devil and the 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 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.
Piccaninny Plains Carbon Abatement	Fire management at Piccaninny Plains involves prescribed burning in the early dry season over a 170,000 ha area. Prescribed burning operations are intended to break-up country, creating a patchwork of fuel loads of different ages. This limits the spread of any wildfires later in the year and, importantly, ensures that the landscape contains patches of vegetation that is old growth (which many animals need for food and shelter). Fire is also used on Piccaninny Plains to control and reduce weed infestations.
Berangabah Human-Induced Regeneration	Bird life has also grown with over 40 species around the homestead and across the two properties including Malleefowls, Wedge Tailed Eagles,

Project	Swans, Pelicans, Bowerbirds, Honeyeaters, Parrots, Cockatoos and Owls.
Catchment Conservation Alliance – Great Barrier Reef Initiative Site #14	The project helps to control erosion and reduce sediment flowing to the wider catchment of the Great Barrier Reef. It supports fragile ecosystems in the region, and provides much-needed habitat for priority species including koalas.
Darajat Unit III Geothermal Project	Sitting within an area known for its biodiversity, Darajat Unit III has helped improve infrastructure in the region, and supports the local community through job creation and investment in schools, helping to address high illiteracy rates in the area.
Geycek Wind Farm Project	The project is contributing to local employment opportunities through the construction and operation phases, and is setting a benchmark in a region characterised by moderate wind speeds which will contribute to the diversification of Turkey's energy mix.

Eligible offsets retirement summary

Offsets retired for Climate Active carbon neutral certification											
Project description	**Type of offset units**	**Registry**	**Date retired**	**Serial number (and hyperlink to registry transaction record)**	**Vintage**	**Stapled quantity**	**Eligible quantity (tCO_2-e)**	**Eligible quantity used for previous reporting periods**	**Eligible quantity banked for future reporting periods**	**Eligible quantity used for this reporting period**	**Percentage of total (%)**
New Leaf Carbon Project	ACCU	ANREU	06 Jan 23	8,330,193,815 - 8,330,198,814	2021-22	-	5,000	-	-	5,000	20%
Piccaninny Plains Carbon Abatement	ACCU	ANREU	06 Jan 23	8,330,162,237 - 8,330,167,236	2021-22	-	5,000	-	-	5,000	20%
Berangabah Human-Induced Regeneration Project	ACCU	ANREU	06 Jan 23	3,797,545,892 - 3,797,546,891	2019-20	-	1,000	-	-	1,000	4%
Catchment Conservation Alliance – Great Barrier Reef Initiative Site #14	ACCU	ANREU	12 May 22	8,331,892,955 - 8,331,892,957	2021-22	-	3	-	-	3	0.01%
Darajat Unit III Geothermal Project	CER	ANREU	06 Jan 23	20,388,867 - 20,400,798	2015	-	11,932	-	-	11,932	49%
Geycek Wind Farm Project	VER	Gold Standard	01 Nov 2021	GS1-1-TR-GS608-12-2018-21306-93748-103747	2018	-	10,000	8,393	-	1,607	7%
									Total offsets retired this report and used in this report	**24,542**	
									Total offsets retired this report and banked for future reports	**0**	

Type of offset units	Quantity (used for this reporting period claim)	Percentage of total
Australian Carbon Credit Units (ACCUs)	11,003	45%
Certified Emissions Reductions (CERs)	11,932	49%
Verified Emissions Reductions (VERs)	1,607	7%

7. RENEWABLE ENERGY CERTIFICATE (REC) SUMMARY

Renewable Energy Certificate (REC) Summary

N/A

APPENDIX A: ADDITIONAL INFORMATION

Virgin Australia retired an additional 2,481 units to offset staff and duty travel.

Additional offsets retired for purposes other than Climate Active carbon neutral certification							
Project description	**Type of offset units**	**Registry**	**Date retired**	**Serial number (and hyperlink to registry transaction record)**	**Vintage**	**Eligible Quantity (tCO_2-e)**	**Purpose of cancellation**
Darajat Unit III Geothermal Project	CER	Gold Standard	06 Jan 23	20,400,799 - 20,403,279	CP2	2,481	Staff & Duty Travel

APPENDIX B: ELECTRICITY SUMMARY

Electricity emissions are calculated using a **location-based approach**. As this is a service certification, dual reporting of electricity emissions is not mandatory.

Location-based method:

The location-based method provides a picture of a business's electricity emissions in the context of its location, and the emissions intensity of the electricity grid it relies on. It reflects the average emissions intensity of the electricity grid in the location (State) in which energy consumption occurs. The location-based method does not allow for any claims of renewable electricity from grid-imported electricity usage.

Location-based approach summary

Location-based approach	Activity data (kWh)	Scope 2 emissions ($kgCO_2$-e)	Scope 3 emissions ($kgCO_2$-e)
ACT	256,512	200,079	17,956
NSW	913,497	712,528	63,945
SA	36,601	10,980	2,562
VIC	2,049,788	1,865,307	204,979
QLD	3,812,639	3,050,111	457,517
NT	16,517	8,919	661
WA	767,913	514,502	7,679
TAS	85,855	12,020	1,717
Grid electricity (scope 2 and 3)	**7,939,322**	**6,374,446**	**757,015**
Total electricity consumed	**7,939,322**	**6,374,446**	**757,015**

Emissions footprint (tCO_2-e)	**7,131**
Scope 2 emissions (tCO_2-e)	6374
Scope 3 emissions (tCO_2-e)	757

APPENDIX C: INSIDE EMISSIONS BOUNDARY

Non-quantified emission sources

The following sources emissions have been assessed as attributable, are captured within the emissions boundary, but are not measured (quantified) in the carbon inventory. These emissions are accounted for through an uplift factor. They have been non-quantified due to one of the following reasons:

1. **Immaterial** <1% for individual items and no more than 5% collectively
2. **Cost effective** Quantification is not cost effective relative to the size of the emission but uplift applied.
3. **Data unavailable** Data is unavailable but uplift applied. A data management plan must be put in place to provide data within 5 years.
4. **Maintenance** Initial emissions non-quantified but repairs and replacements quantified.

Relevant-non-quantified emission sources	(1) Immaterial	(2) Cost effective (but uplift applied)	(3) Data unavailable (but uplift applied & data plan in place)	(4) Maintenance
Water & wastewater	Yes			
Refrigerants	Yes			
Embodied Emissions	Yes			

Excluded emission sources

Attributable emissions sources can be excluded from the carbon inventory, but still considered as part of the emissions boundary if they meet **all three of the below criteria**. An uplift factor may not necessarily be applied.

1. A data gap exists because primary or secondary data cannot be collected **(no actual data).**
2. Extrapolated and proxy data cannot be determined to fill the data gap (**no projected data**).
3. An estimation determines the emissions from the process to be **immaterial**).

	No actual data	No projected data	Immaterial
Ground fuels - third party ground handling agents using non-VA equipment	No actual data	No projected data	Immaterial

APPENDIX D: OUTSIDE EMISSION BOUNDARY

Non-attributable emissions have been assessed as not attributable to a product or service (do not carry, make or become the product/service) and are therefore not part of the carbon neutral claim. To be deemed attributable, an emission must meet two of the five relevance criteria. Emissions which only meet one condition of the relevance test can be assessed as non-attributable and therefore are outside the carbon neutral claim. Non-attributable emissions are detailed below.

1. **Size** The emissions from a particular source are likely to be large relative to the organisation's electricity, stationary energy and fuel emissions

2. **Influence** The responsible entity has the potential to influence the reduction of emissions from a particular source.

3. **Risk** The emissions from a particular source contribute to the organisation's greenhouse gas risk exposure.

4. **Stakeholders** Key stakeholders deem the emissions from a particular source are relevant.

5. **Outsourcing** The emissions are from outsourced activities previously undertaken within the organisation's boundary, or from outsourced activities typically undertaken within the boundary for comparable organisations.

No emission sources were assessed as being non-attributable in this reporting period.

An Australian Government Initiative

Climate Active