COMPANY NAME: QANTAS AIRLINES (PASSENGER PRODUCT)

REPORTING PERIOD: 2015-2016

## 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.

| | |
|---|---|
| Signature  | Date 13-9-17 |
| Name of Signatory: Megan Flynn | |
| Position of Signatory: Group Manager Environment & Carbon Strategy | |

| | |
|---|---|
| Carbon neutral certification category | Product |
| Date of most recent external verification/audit | |
| Auditor | Pangolin Associates |
| Auditor assurance statement link | |

Australian Government
Department of the Environment and Energy



Template Version: 4 January 2017 v5.2

# 1. Carbon neutral information

## 1A. Introduction

## Product Description

The Qantas Group's product offering is the provision of voluntary carbon neutral passenger services to both our customers and employees.

To assess the volume of emissions attributable to a passenger flying a sector (from one airport to another), Qantas has undertaken a comprehensive life cycle assessment (LCA) of energy usage in flight (aviation fuel) and on the ground (catering centres, engineering facilities, airport terminals, office and ground transport vehicles). The LCA includes the embodied energy of the aircraft flown by the airline, but excludes all Qantas Freight related activity (in flight and on the ground).

Freight activities are excluded because the product offers carbon neutral services for emissions only attributable to passenger travel. Qantas offers a separate carbon neutral Freight product for our customers.

The LCA is updated each financial year. Qantas have selected emission factors that are geographically specific to the emission sources accounted for in the product LCA. There are no geographic limitations to the scope of the LCA as we are a global airline.

The objective of the LCA is to assess the emissions footprint of our customers in sufficient detail to evaluate the global warming potential attributable to a passenger travelling on a Qantas Group aircraft. An average emissions footprint per passenger kilometre is applied to codeshare and other non-Qantas Group flights for carbon neutral certification under the NCOS-CN program.

Using Qantas Group activity data over the previous 12 months and 'full fuel cycle' emission factors published by the Australian Government (National Greenhouse Accounts), the passenger's specific portion of emissions released by a given Qantas Group fleet are added to the related emissions released from ground activities and divided by the total distance travelled. For Qantas Group sectors, these rates are weighted by the aircraft used on that sector as well as distance travelled.

## Qantas Airlines

Founded in regional Queensland in 1920 – as the Queensland and Northern Territory Aerial Service – Qantas is one of Australia's most iconic brands and has played a central role in the development of the Australian and international aviation industry.

Today the Qantas Group is a diversified global aviation business, comprising Qantas Domestic, Qantas International, the Jetstar low-cost carrier group and Qantas Loyalty.

In total, the Qantas Group operates more than 7,300 flights each week and, together with its codeshare and oneworld partners, offers flights to more than 1000 destinations around the world.

Qantas is ranked the world's safest airline by AirlineRatings.com, the best airline in the Australia-Pacific by Skytrax, and holds many major awards for service, food and wine, technology and innovation.

The Qantas Group carries 51 million passengers each year and employs more than 30,000 people.

## Functional Unit

The functional unit for domestic travel is the transport of a single passenger over a specified distance from entry into the airport terminal at origin to exiting the airport terminal (i.e., kg CO2-e per passenger-kilometre).

For international travel the functional unit is the transport of a single passenger over a specified distance from entry into an Australian airport terminal at origin to exiting the aircraft at an international port. Similarly for the return trip to Australia, the functional unit is the transport of a single passenger over a specified distance from entry into the aircraft at an international port to exiting at an Australian airport terminal (expressed in kg CO2-e per passenger-kilometre).

## Standard

The LCA has been prepared in accordance with the NCOS-CN Guidelines and in accordance with international standards ISO 14040:2006 and ISO 14044:2006.

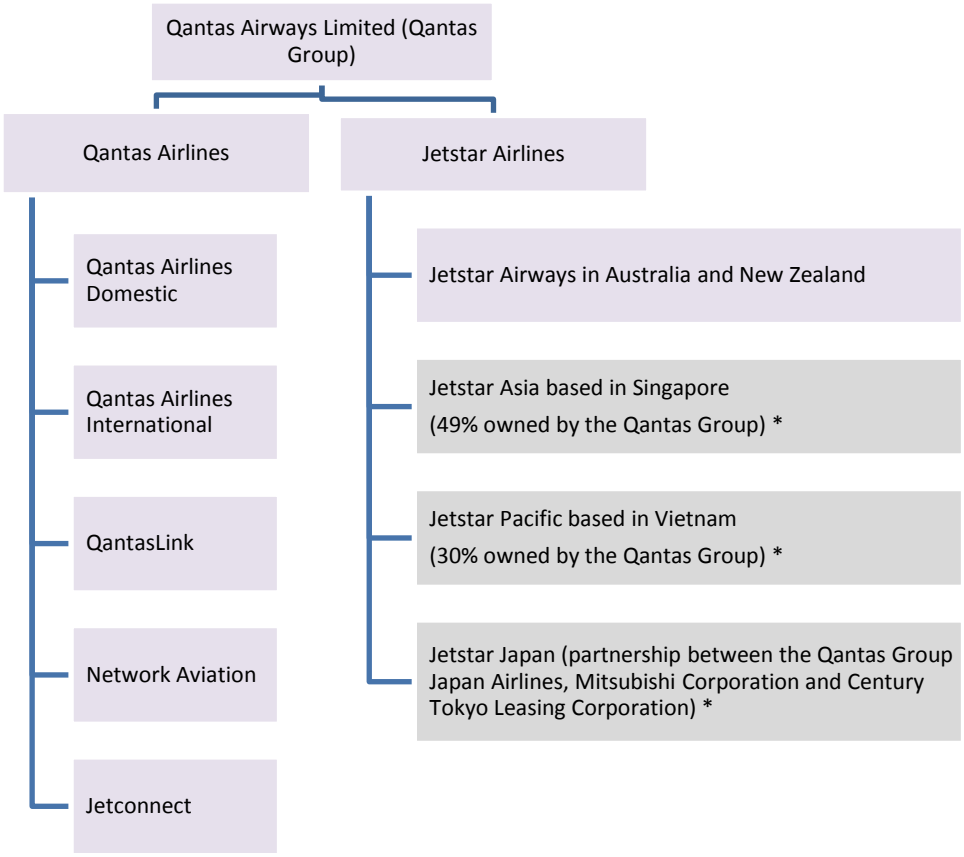
# Greenhouse gases considered

Greenhouse gases considered include carbon dioxide, nitrous oxide and methane and relevant refrigerants.

# Consolidation Approach

An operational consolidation approach has been used and includes the entities shown in Figure 1. It should be noted that the organisational diagram represents the reporting structure for the purpose of NCOS accreditation and does not reflect the legal corporate structure of the Qantas Group:

Figure 1: Organisational diagram representing the reporting structure for the purpose of NCOS accreditation.




* These organisation's activities have been excluded from the carbon footprint assessment that forms the basis for calculating emissions per passenger-kilometre rates that are subsequently used to estimate emissions per passenger for each sector (from airport to another) the product is offered (see section 3). These organisations do not form part of the CN program. Duty travel has also been excluded as it is offset separately by Qantas and Jetstar.

## 1B. Emission sources within certification boundary

### Quantified sources

Emission sources quantified include:

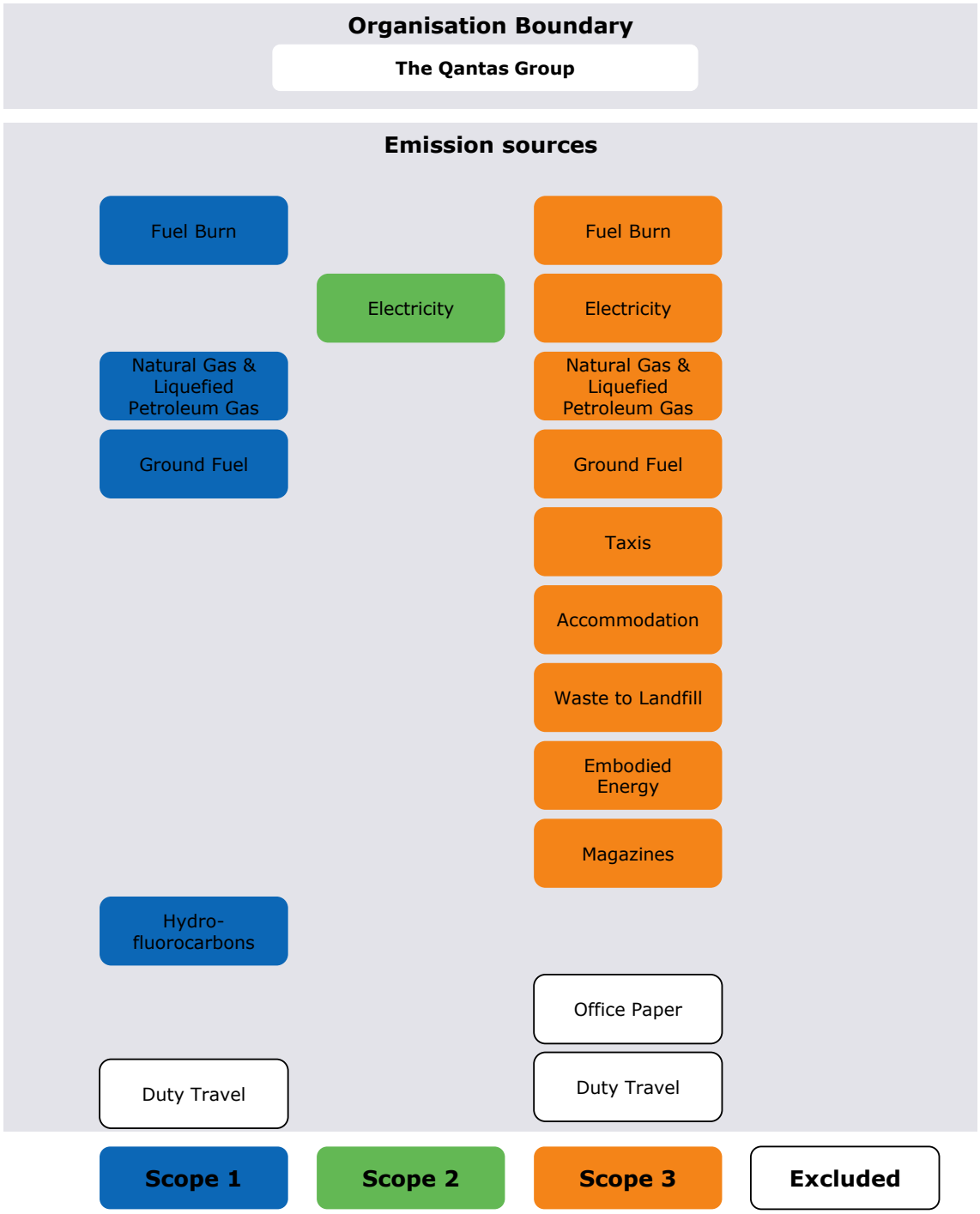
- Kerosene (Stationary and transport) – Scope 1 and 3
- Diesel (stationary and transport) – Scope 1 and 3
- Gasoline (transport) – Scope 1 and 3
- LPG (stationary and transport) – Scope 1 and 3
- Natural gas (stationary and transport) – Scope 1 and 3
- Electricity – Scope 2 and 3
- Refrigerants – Scope 1
- Oils, Greases and solvents – Scope 1 and 3
- Accommodation and Taxis – Scope 3
- Waste (Food and Commercial and Industrial)- Scope 3
- Embodied energy of aircraft – Scope 3
- Onboard catering including food, drink and plastic consumables across all airlines (Jetstar and Qantas Mainline) – Scope 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 affect the overall total emissions.

| Emission source | Scope | Justification for exclusion & overall implications for footprint |
|---|---|---|
| Office Paper | 3 | It is expected these emissions are negligible (relative to other Scope 3 emissions) and the administrative burden involved in collating the data is considered to outweigh the benefit. |
| Water | 3 | It is expected that these emissions will be negligible, relative to other Scope 3 emissions. |
| Ground fuels at international ports | 3 | Ground fuels at international ports are outside Qantas' operational control and outside the scope of this LCA. |
| Electricity at international ports | 3 | Electricity use at international ports are outside the scope of this LCA. |
| International scope 3 emissions (except for fuel burn and embodied energy related emission sources) | 3 | International scope 3 emissions are deemed immaterial and beyond operational control |
| Airline Related Business Travel | 1 & 3 | The Qantas Group offsets all employee and contractor business travel. Since our corporate travel is offset, we exclude business travel from our emissions profile to prevent double counting |

## 1C. Diagram of certification boundary



# 2. Emissions reduction measures

## *2A. Emissions over time*

| **Table 1.** Emissions since base year | | | |
|---|---|---|---|
| | Base Year (2012/13) | 2015 | 2016 |
| Scope 1 | 12,410,247 | 9,960,115 | 10,383,851 |
| Scope 2 | 221,026 | 147,056 | 129,961 |
| Scope 3 | 1,039,742 | 878,714 | 1,138,683 |
| *Total* | 13,671,015 t CO2-e | 10,985,885 t CO2-e | 11,652,495 t CO2-e |
| Emissions/PAX (kg CO2-e/PAX km) | 0.134 | 0.104 (kg CO2-e/PAX km) | 0.104 (kg CO2-e/PAX km) |

## *2B. Emissions reduction strategy*

At Qantas, we believe all businesses have a responsibility to continually reduce their environmental footprint. We take this responsibility seriously because we recognise the impact our business has on the environment. By positioning environmental sustainability at the core of our business we are able to implement programs that reduce our impact and drive greater efficiencies across all aspects of how we operate.

Our environmental philosophy: to measure, reduce, offset and influence forms the basis of our key sustainability initiatives.

Qantas comprehensively evaluates our total impact under the NGERS framework. Our dedicated fuel efficiency team and continual fleet renewal are our most material emissions reduction activity. We also actively monitor and reduce our energy and water consumption on the ground, and the waste we send to landfill. We set, monitor and evaluate our progress against rigorous targets for our emissions on a yearly basis – which can be found on our website at Qantas.com/environment

Qantas is an active participant in the biofuel research and development community, and is working with key stakeholders to develop commercially viable aviation biofuels which could reduce our emissions by up to 80%.

However, in the near to medium term, there is no viable alternative to petroleum based jet fuel for the aviation industry. As such, carbon offsetting has and will continue to play a key role in Qantas' emissions reduction strategy. We offset all employee and contractor business travel, and have the largest voluntary offset program in the world – Fly Carbon Neutral.

Qantas supports the International Civil Aviation Organisation's (ICAO) commitment to achieve carbon neutral growth at an industry level from 2020 onwards, and the aspirational goal to achieve a 50% reduction in net emissions by 2050 based on 2005 emissions.

Finally, we seek to engage our customers, investors, employees and partners to take proactive steps to assess and reduce their environmental footprint, and work with us to generate positive environmental and social outcomes.

## *2C. Emissions reduction actions*

Fuel efficiency and fleet renewal offer the greatest opportunities to decrease aviation fuel use. Qantas and Jetstar have a young average fleet age of 8.6 years, we anticipate this will decrease in the next few years as new, efficient planes such as the Boeing 787-9 Dreamliner enter the fleet. As part of the Qantas Transformation program, we have accelerated and centralised our fuel efficiency program. We expect to deliver improvements in our group fuel efficiency each year as a result of this new initiative.

# 3. Emissions summary

**Table 2.** Emissions Summary

| Scope | Emission source | t $CO_2$-e |
|---|---|---|
| 1 | Natural gas distributed in a pipeline | 11,237 |
| 1 | Petroleum based oils (other than petroleum based oil used as fuel) | 636 |
| 1 | Petroleum based greases (not combusted) | 28 |
| 1 | Kerosene (other than for use as fuel in an aircraft) | 365 |
| 1 | Solvents if mineral turpentine or white spirits | 1,203 |
| 1 | Liquefied petroleum gas | 1,211 |
| 1 | Gasoline (other than for use as fuel in an aircraft) | 831 |
| 1 | Diesel oil (transport) | 9,539 |
| 1 | Kerosene for use as fuel in an aircraft | 10,357,631 |
| 1 | Hydrofluorocarbons (HFCs) - Commercial air conditioning | 1,169 |
| 2 | Purchased electricity from a grid NSW & ACT | 1,970 |
| 2 | Purchased electricity from a grid NSW & ACT | 32,135 |
| 2 | Purchased electricity from a grid (GridX) | 17,568 |
| 2 | Purchased electricity from a grid VIC | 41,645 |
| 2 | Purchased electricity from a grid QLD | 25,832 |
| 2 | Purchased electricity from a grid SA | 1,214 |
| 2 | Purchased electricity from a grid WA | 8,837 |
| 2 | Purchased electricity from a grid TAS | 171 |
| 2 | Purchased electricity from a grid NT | 588 |
| 3 | Natural gas - Metro - NSW | 1,015 |
| 3 | Natural gas - Metro - VIC | 354 |
| 3 | Natural gas - Metro - ACT | 91 |
| 3 | Natural gas - Metro - QLD | 189 |
| 3 | Natural gas - Metro - WA | 76 |
| 3 | Petroleum based oils (other than petroleum based oil used as fuel) | 165 |
| 3 | Petroleum based greases (not combusted) | 29 |
| 3 | Kerosene (other than for use as fuel in an aircraft) | 19 |
| 3 | Solvents if mineral turpentine or white spirits | 62 |
| 3 | Liquefied petroleum gas - stationary | 72 |
| 3 | Gasoline (other than for use as fuel in an aircraft) | 43 |
| 3 | Diesel oil | 487 |
| 3 | Kerosene for use as fuel in an aircraft (avtur) | 547,822 |
| 3 | Purchased electricity from a grid (NSW & ACT) | 281 |

| **Table 2.** Emissions Summary | | |
|---|---|---|
| Scope | Emission source | t $CO_2$-e |
| 3 | Purchased electricity from a grid (NSW & ACT) | 4,591 |
| 3 | Purchased electricity from a grid (NSW & ACT) | 3,978 |
| 3 | Purchased electricity from a grid (VIC) | 4,791 |
| 3 | Purchased electricity from a grid (QLD) | 4,251 |
| 3 | Purchased electricity from a grid (SA) | 238 |
| 3 | Purchased electricity from a grid (WA) | 814 |
| 3 | Purchased electricity from a grid (TAS) | 29 |
| 3 | Purchased electricity from a grid (NT) | 88 |
| 3 | Food waste | 23,253 |
| 3 | Commercial and industrial waste | 11,876 |
| 3 | Embodied energy (China and Aluminium only) | 28,444 |
| 3 | Food and Drink | 391,063 |
| 3 | Plastics: average plastics - primary production | 22,920 |
| 3 | Recycled paper - Domestic | 1,695 |
| 3 | Accommodation | 87,300 |
| 3 | Taxi | 2,648 |
| Total Gross Emissions (tonne CO2-e) | | 11,652,495 |
| GreenPower or retired LGCs | | 0 |
| Total Net Emissions (tonne CO2-e)[1] | | 11,652,495 |

[1] The total net emissions are not the carbon offset cancellations required in the context of the product offering. As aforementioned, the goal of the LCA is to assess an emissions footprint in sufficient detail that supports the global warming potential attributable to a passenger on a Qantas Group and/or an average emissions footprint per kilometre to be applied to codeshare and other non-Qantas Group flights for carbon neutral certification under the NCOS-CN program.

Therefore, the total net emissions coupled with the total passenger-kilometres travelled by the Qantas Group, provides the following updated functional unit (average emissions footprint per passenger kilometre):

| | |
|---|---|
| Passenger-Kilometres [pax-km] | *112,227,000,000* |
| Total Net Emissions [t CO2-e] | *11,652,495* |
| Functional Unit [kg CO2-e per pax-km] | **0.104** |

A further process is undertaken to calculate sector specific emission factors (e.g Sydney to Melbourne) which are a function of the sector distance and the fleet used for that route.

The emissions for each sector are found on the 'Sector Emissions per pax' tab in the calculation spreadsheet. The values calculated for each sector based on the FY16 LCA will be applied to carbon offsets purchased in FY17. The values calculated for each sector based on the FY15 LCA have been applied to the purchase of offsets in 2016. It should be noted that offsets are purchased in arrears.

The total tonnes of carbon neutral flights sold (**135,554** tonnes CO2-e) equate the total offsets purchased. A further **38,247** tonnes CO2-e of offsets were purchased to offset duty travel.

# 4. Carbon offsets

## *4A. Offsets summary*

**Table 3.** Offsets Summary

| Offset type and registry | Year retired | Quantity | Serial numbers |
|---|---|---|---|
| VCU - APX BCS Registry | 2016 | 3935 | 3312-148891536-148895470-VCU-003-APX-CN-1-1200-01012010-31122010-0 |
| VCU - APX BCS Registry | 2016 | 15957 | 4450-186439819-186455775-VCU-016-APX-PG-14-1122-22052009-31122012-0 |
| VCU - APX BCS Registry | 2016 | 711 | 2285-95270667-95271377-VCU-008-MER-KH-3-181-01012011-31122011-0 |
| VCU - APX BCS Registry | 2016 | *4366* | 2906-127208102-127212467-VCU-008-MER-KH-3-181-01012012-31122012-0 |
| VCU - APX BCS Registry | 2016 | *223* | 3352-150190036-150190258-VCU-006-MER-PE-14-868-01012010-31122012-0 |
| VCU - APX BCS Registry | 2016 | *1953* | 3352-150223083-150225035-VCU-006-MER-PE-14-868-01012010-31122012-0 |
| VCU - APX BCS Registry | 2016 | *366* | 2657-116657376-116657741-VCU-016-MER-AU-14-587-01032011-29022012-0 |
| VCU - APX BCS Registry | 2016 | *1494* | 4014-172104189-172105682-VCU-016-MER-AU-14-641-16042012-15042013-0 |
| VCU - APX BCS Registry | 2016 | *1766* | 3291-148263462-148265227-VCU-016-MER-AU-14-641-16042012-15042013-0 |
| VCU - APX BCS Registry | 2016 | *1705* | 2759-119554447-119556151-VCU-008-MER-TH-4-403-01012010-31122010-0 |
| VCU - APX BCS Registry | 2016 | *20054* | 3031-132973979-132994032-VCU-008-MER-TH-4-403-01032011-31122011-0 |
| CER | 2016 | *10000* | 514701081-514711080 |
| CER | 2016 | *10000* | 514711081-514721080 |
| VER | 2016 | 76 | GS1-1-TR-GS935-5-2014-4369-1 to 76 |

**Table 3.** Offsets Summary

| Offset type and registry | Year retired | Quantity | Serial numbers |
|---|---|---|---|
| VER | 2016 | 124 | GS1-1-TR-GS935-5-2012-4371-1 to 124 |
| VER | 2016 | 200 | GS1-1-TR-GS353-13-2013-4235-1 to 200 |
| VER | 2016 | 192 | GS1-1-TR-GS707-21-2010-4562-1 to 192 |
| VER | 2016 | 192 | GS1-1-TR-GS707-21-2010-4512-1 to 192 |
| VER | 2016 | 211 | GS1-1-TR-GS440-21-2014-4177-1 to 211 |
| VER | 2016 | 449 | GS1-1-TR-GS1016-21-2011-4201-1 to 449 |
| VER | 2016 | 502 | GS1-1-TR-GS707-21-2011-4511-1 to 502 |
| VER | 2016 | 502 | GS1-1-TR-GS707-21-2011-4561-1 to 502 |
| VER | 2016 | 952 | GS1-1-TR-GS1013-21-2013-4349-1 to 952 |
| VER | 2016 | 200 | GS1-1-TR-GS633-14-2013-3885-1 to 200 |
| VER | 2016 | 44 | GS1-1-TR-GS1034-12-2015-4554-1 to 44 |
| VER | 2016 | 166 | GS1-1-TR-GS947-12-2011-3894-1 to 166 |
| VER | 2016 | 551 | GS1-1-TR-GS854-12-2012-4180-1001 to 1551 |
| VER | 2016 | 892 | GS1-1-TR-GS854-12-2011-4181-501 to 1392 |
| ACCU | 2016 | 2233 | 20160929 |
| ACCU | 2016 | 2375 | 20160929 |
| ACCU | 2016 | 750 | 20160929 |
| VCS | 2016 | 19,787 | 728 3785-164900089-164919875-VCU-003-APX-CN-1-728-29092012-31122012-0 |
| VCS | 2016 | 8,337 | 403 3031-133000382-133008718-VCU-008-MER-TH-4-403-01032011-31122011-0 |
| VCS | 2016 | 4,000 | 403 3031-133011406-133015405-VCU-008-MER-TH-4-403-01032011-31122011-0 |
| VCS | 2016 | 2,000 | 1122 4720-195330965-195332964-VCU-016 APX-PG-14-1122-22052009-31122012-0 |
| VCS | 2016 | 13,402 | 1122 4668-192839809-192853210-VCU-016-APX-PG-14-1122-22052009-31122012-0 |
| VCS | 2016 | 486 | 1122 4611-191041339-191041824-VCU-016-APX-PG-14-1122-22052009-31122012-0 |

| **Table 3.** Offsets Summary | | | |
|---|---|---|---|
| Offset type and registry | Year retired | Quantity | Serial numbers |
| VCS | 2016 | 624 | 587 3229-145727735-145728358-VCU-016-MER-AU-14-587-01032012-28022013-0 |
| VCS | 2016 | 874 | 181 2906-127212468-127213341-VCU-008-MER-KH-3-181-01012012-31122012-0 |
| VCS | 2016 | 375 | 868 4365-184018290-184018664-VCU-006-MER-PE-14-868-01012010-31122012-0 |
| VCS | 2016 | 2,528 | 641 1613-67386952-67389479-VCU-006-MER-AU-14-641-01042010-30062011-0 |
| Total offsets retired | | | 135,554 |
| Net emissions | | | 135,554 |
| Total offsets held in surplus for future years: [include serial number batch] | | | 0 |

## *4B. Offsets purchasing and retirement strategy*

The Qantas Group does not and has no plans to purchase and hold carbon credits under NCOS-CN. This reporting year, a preliminary assessment of uptake for voluntary carbon offsets was communicated to the voluntary carbon offsets' supplier. The supplier then prepared a portfolio that was, once approved by Qantas, purchased and retired (assigned to Qantas).

## *4C. Offset projects (Co-benefits)*

Qantas has a comprehensive offset procurement policy that preferences offset projects with social and environmental outcomes beyond carbon reductions. Qantas purchases Australian abatement where possible and supports indigenous enterprise in our carbon reduction activities

# 5. Use of trade mark

| **Table 4.** Trade mark register | |
|---|---|
| Where used | Logo type |
| *Qantas website http://www.qantas.com/travel/airlines/fly-carbon-neutral/global/en* | *Certified product* |