National Carbon Offset Standard
Carbon Neutral Program
Public Disclosure Summary

An Australian Government Initiative

QANTAS AIRLINES (FREIGHT PRODUCTS)

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.

Signature Date: 13/8/18

Name of Signatory: Megan Flynn

Position of Signatory: Group Manager Environment & Carbon Strategy

Type of carbon neutral certification: Product
Verification
Date of most recent external verification/audit: 14 September 2017
Auditor: Pangolin Associates
Auditor assurance statement link: Attached

Australian Government
Department of the Environment and Energy

1. Carbon neutral information

1A. Introduction

Product Description

The Qantas Group's product offering is Carbon Neutral Freight which involves the provision of voluntary carbon neutral freight services to both customers and staff for our aviation-based freight products.

Qantas Freight operates a network of 22specialist cargo handling terminals in 12 major gateway ports across Australia and in a dedicated terminal in Los Angeles. These terminals handle freight for Qantas and Jetstar, as well as many other major carriers. Each terminal offers a variety of services appropriate to local market needs, including: coolrooms and freezers for perishables; warm rooms for shipments vulnerable to cold weather; strongrooms and safes for secure storage; and dry and wet ice for re-icing.

Air freight services include Q-go Priority, Express and Classic as well as freight services for pets and animals and Q-go Fresh, Pharma, Secure and Custom. Each provides a slightly different service with respect to time of delivery and type of goods to be transported. Freight accepted for transport by Qantas Freight is either transported within the belly of a passenger aircraft or on dedicated freighters. The type of transport used is dependent upon the product chosen, i.e. delivery time, destination and good to be delivered, as well as available space in the aircraft. To supplement freight services provided by Qantas passenger aircraft (belly freight), Qantas Freight operates a fleet of 14 dedicated freighter aircraft.

To accurately calculate the volume of emissions attributable to a tonne of freight 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 ground (engineering facilities, freight terminals, freight office and ground transport vehicles) activities. The LCA also includes the embodied energy of the aircraft flown by the airline (dedicated freighters and a portion of passenger aircraft that could be allocated to belly freight based on fuel burn). It excludes all passenger related activity (in flight and on ground) and the activities associated with JETS Transport Express, Qantas' road freight business.

Passenger activities are excluded because the product offers carbon neutral services for emissions specifically attributable to the transport of freight. JETS Transport Express is excluded as the freight product relates to freight transported using aircraft.

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.

The Qantas Group's fleet numbers 309 aircraft with an average age of 9.6 years including the acclaimed Qantas Boeing 787-9 Dreamliner and Airbus A380.

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 over 53.6 million passengers each year and employs 29,500 people.

Life Cycle Assessment

Objective and approach

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 the movement of a tonne of freight on a Qantas Group aircraft. An average emissions footprint per freight tonne kilometre is applied to codeshare and other non-Qantas Group flights for carbon neutral certification under the NCOS-CN program.

This LCA covers the emissions from the following freight related streams:

1. Dedicated domestic and international freight (Qantas Freight)
2. Freight carried in domestic and international passenger aircraft (Belly freight carried on both Jetstar and Qantas).

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 freight specific portion of emissions released by a given Qantas Group fleet (belly freight) and Freight specific emissions are added to the related emissions released from ground activities and divided by the total distance travelled (RFTK). The resulting emission factor is applied across all types of freight (belly freight and dedicated freighters).

Functional Unit

The functional unit is the transport of one tonne of freight expressed in tonnes CO_2-e per tonne kilometre based on freight transported on aircraft within and outside of Australia. It includes Qantas Freight and belly freight transported on Qantas and Jetstar passenger aircraft. The functional unit only includes the ground support required to load the freight onto the aircraft and excludes transport to and from the airport. Ground support is not included for freight loading/unloading at international ports. Note that the resulting emission factor is to be applied across all freight including belly freight and freight transported on Qantas dedicated air freight services to take into account the inherent variability in the method used to transport freight.

Geographic considerations
Qantas freight operations occur worldwide, with the majority of emissions resulting from the combustion of aviation fuel. A specific emission factor has been developed based on the specific chemical composition of the fuel supplied to Qantas. All other sources of emissions including ground fuel and utilities originate in Australia and geographically specific emission factors have been used.

LCA Standards
This LCA has been prepared in accordance with the National Carbon Offset Standard-Carbon Neutral Standard and 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.

Allocation of Belly Freight
Qantas Freight use passenger aircraft for freight transport (belly freight). The quantity fuel used for freight transported in passenger aircraft was determined using traffic statistics for Qantas mainline which provided information on the following by aircraft type:

- PAX RTK passenger revenue tonne kilometres - which is the revenue load in tonnes of passengers multiplied by the distance flown;
- RTK which is the revenue load in tonnes multiplied by the distance flown (that is the total load – freight and passengers flown).

The freight component for each aircraft type was determined using the following formula:

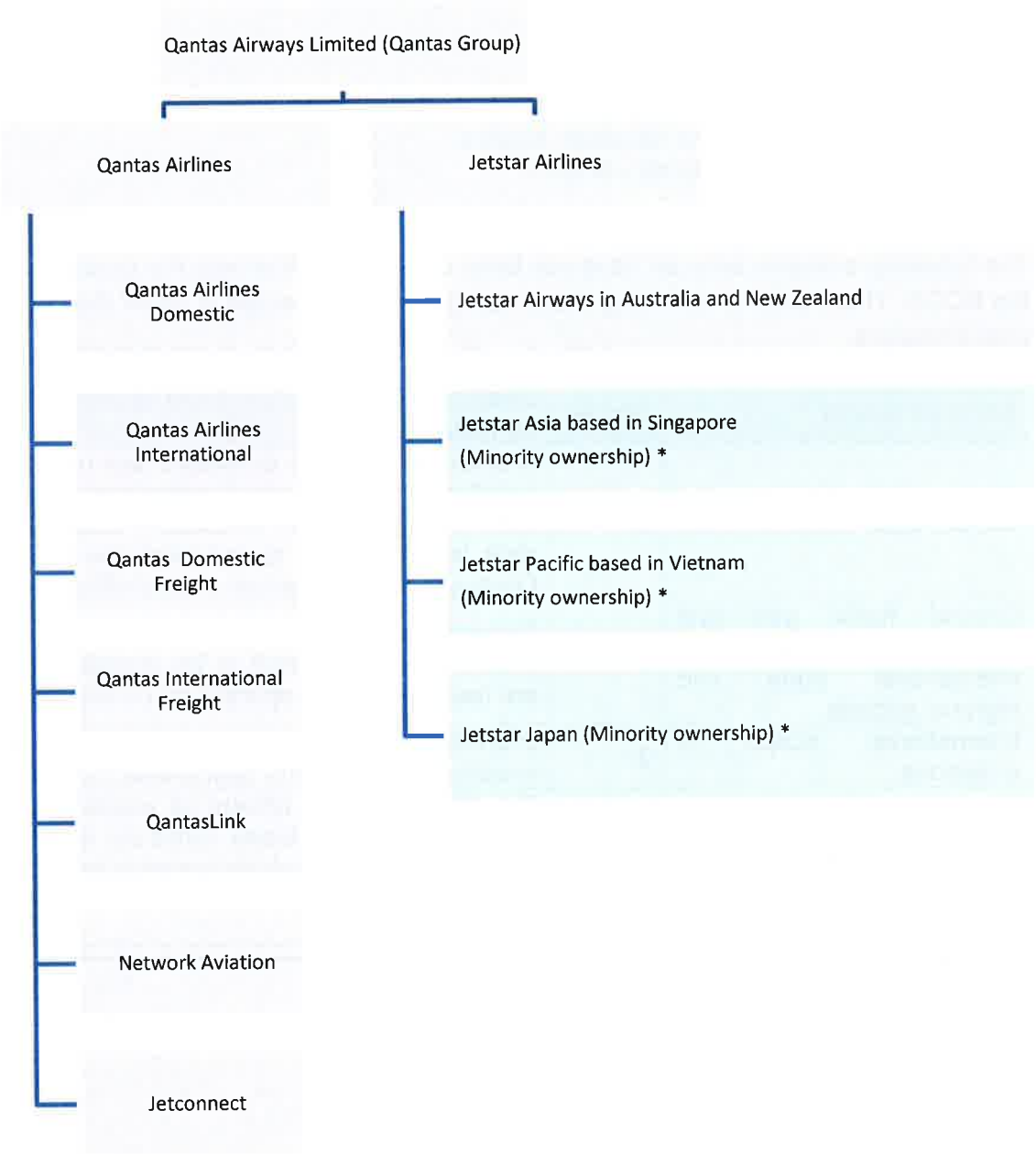
%RFTK = (RTK – PAX RTK)/RTK

This percentage was applied to fuel use by aircraft type to apportion fuel to belly freight.

A similar approach was used for Jetstar services; however, PAX RTK and RTK was not available by aircraft type and a single belly freight percentage was applied across the Jetstar fleet.

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 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).

1B. Emission sources within certification boundary

Quantified sources

The following emission sources have been quantified:

- Kerosene (stationary and transport) – Scope 1 and 3
- Diesel (stationary and transport) – Scope 1 and 3

- Gasoline (transport) – Scope 1 and 3
- LPG (stationary) – Scope 1 and 3
- Natural gas – Scope 1 and 3
- Electricity – Scope 2 and 3
- Refrigerants – Scope 1
- Waste (Commercial and Industrial)- Scope 3
- Embodied energy of aircraft – Scope 3

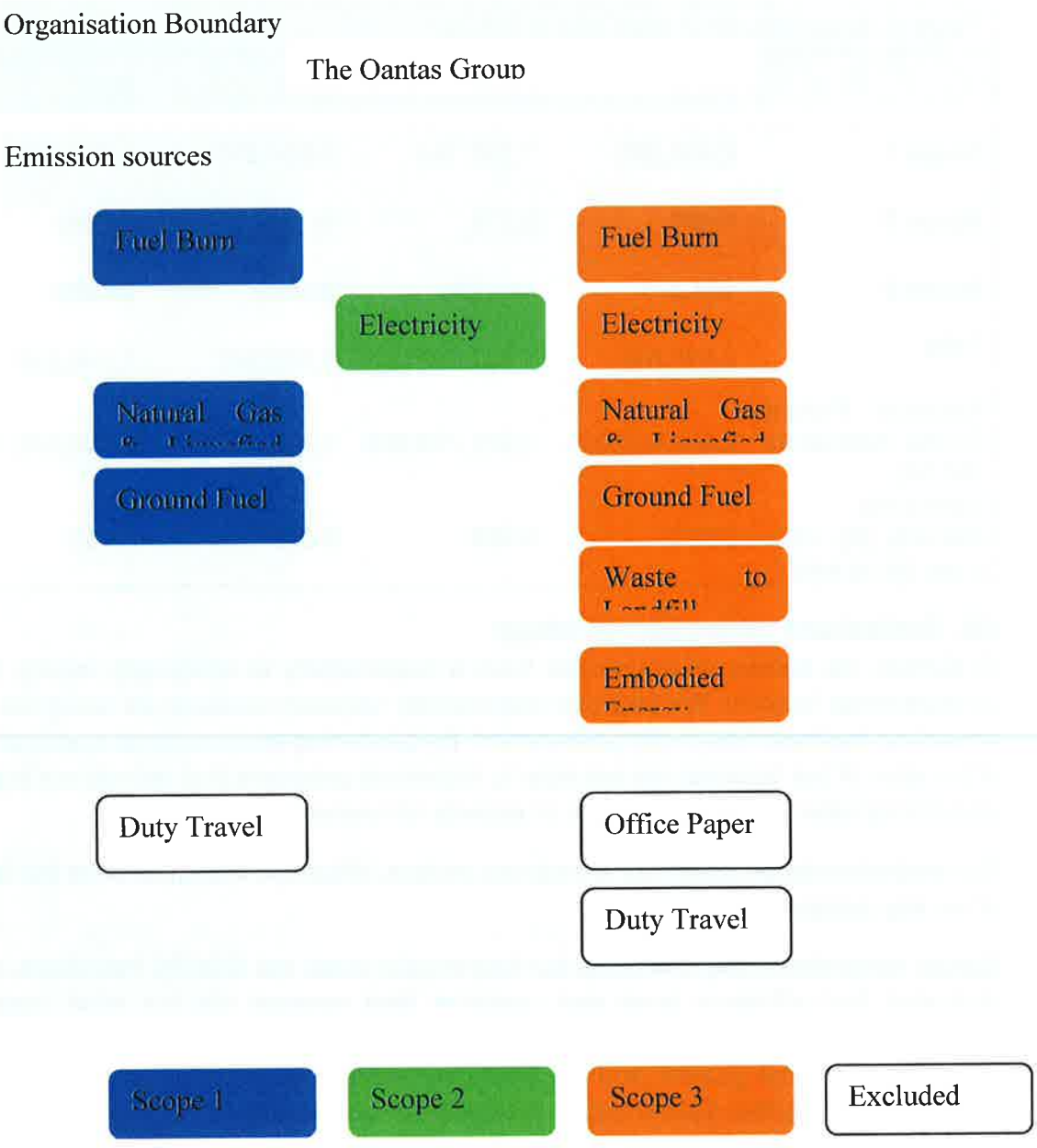
Non-quantified sources

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. Qantas purchases carbon neutral office paper.
Ground fuels, gas and electricity used at international ports and regional airports	3	Ground fuels at international ports and regional airports are considered to be immaterial and are beyond Qantas' operational control
International scope 2 emissions	2	International scope 2 emissions are deemed immaterial and beyond operational control
Airline Related Business Travel	2 and 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

Quantified sources



2. Emissions reduction measures

2A. Emissions over time

Table 1 summarises the change in emissions associated with freight since the base year.

Table 1. Emissions since base year (t CO_2-e)

	Base Year (2013	2015	2016	2017
Scope 1	2,404,052	1,747,144	1,654,203	1,640,519
Scope 2	4,489	8,771	11,253	11,040
Scope 3	184,275	141,680	94,885	94,968
Total	2,592,816	1,897,595	1,760,342	1,746,526
Revenue Freight Tonne Kilometres (RFTK)	2,609,611,015	1,917,773,884	1,939,660,993	1,868,040,105
Emissions intensity (kg CO_2-e per tonne km)	0.994	0.989	0.908	0.935

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 philosophies 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 activities. 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 customer offset program in the world – Fly Carbon Neutral. Since the program's inception in 2009, our customers have offset the volume of Sydney Harbour twice – over two million tonnes of carbon dioxide.

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 9.6 years, which is very low compared to our competitors and we anticipate it will decrease in the next few years as we continue to welcome new, more efficient planes into our fleet, such as the Boeing 787-9 Dreamliner in 2017. 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 initiative.

3. Emissions summary

Table 2. Emissions Summary

Scope	Emission source	t CO_2-e
1	Natural gas distributed in a pipeline	227.1
1	Petroleum based oils (other than petroleum based oil used as fuel)	4.1
1	Petroleum based greases (not combusted)	0.1
1	Diesel oil	6,537.9
1	Solvents if mineral turpentine or white spirits	0.0
1	Liquefied petroleum gas	58.3
1	Gasoline (other than for use as fuel in an aircraft)	11.9
1	Diesel oil (stationary)	125.8
1	Kerosene for use as fuel in an aircraft	1,633,553
1	Hydrofluorocarbons (HFCs) - Commercial air conditioning	0
2	Purchased electricity from a grid (NSW & ACT)	133.5
2	Purchased electricity from a grid (NSW & ACT)	4,602.6
2	Purchased electricity from a grid VIC	3,391.9
2	Purchased electricity from a grid QLD	2,162.7
2	Purchased electricity from a grid SA	299.2
2	Purchased electricity from a grid WA	285.7

Table 2. Emissions Summary

Scope	Emission source	t CO_2-e
2	Purchased electricity from a grid TAS	14.4
2	Purchased electricity from a grid NT	149.9
3	Natural gas - Metro - NSW	42.8
3	Natural gas - Metro - VIC	4.1
3	Petroleum based oils (other than petroleum based oil used as fuel)	1.1
3	Petroleum based greases (not combusted)	0.1
3	Diesel oil - stationary	6.5
3	Solvents if mineral turpentine or white spirits	0
3	Liquefied petroleum gas - stationary	3.5
3	Gasoline (other than for use as fuel in an aircraft)	0.6
3	Diesel oil	333.9
3	Kerosene for use as fuel in an aircraft (avtur)	86,343.8
3	Purchased electricity from a grid (NSW & ACT)	19.3
3	Purchased electricity from a grid (NSW & ACT)	665.4
3	Purchased electricity from a grid (VIC)	314.1
3	Purchased electricity from a grid (QLD)	383.3
3	Purchased electricity from a grid (SA)	55.0
3	Purchased electricity from a grid (WA)	24.5
3	Purchased electricity from a grid (TAS)	3.1
3	Purchased electricity from a grid (NT)	21.1
3	Commercial and industrial waste	701.4
3	Embodied energy (China and Aluminium only)	5,033.7
3	Taxi	17.3
3	Accommodation	950.8
3	Water	42.6
Total Gross Emissions		1,746,526
GreenPower or retired LGCs		0
Total Net Emissions		1,746,526

4. Carbon offsets

4A. Offsets summary

As this is a new offering to Qantas freight customers, no freight emissions have been offset and no offsets have been purchased.

4B. Offsets purchasing and retirement strategy

The Qantas Group does not and has no plans to purchase and hold carbon credits under NCOS-CN. The Qantas Group will purchase and retire carbon offsets in the same manner as we do through for our passenger offset program.

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

Qantas have not used the NCOS trademark in the last 12 months for the Carbon Neutral Freight product.