

# Qatar Airways Group Sustainability Report 2015-2016



## Reporting scope

This Qatar Airways Group Sustainability Report covers the period 1<sup>st</sup> April 2015 – 31<sup>st</sup> March 2016. Data is provided for certain environmental issues from 1<sup>st</sup> April 2014 to illustrate trends.

The scope of this report includes Qatar Airways and Qatar Airways Cargo, Hamad International Airport, Qatar Aviation Services, Qatar Aircraft Catering Company, Qatar Duty Free Company, Qatar Executive, and Qatar Distribution Company.

Reporting includes activities undertaken in Qatar as well as flights to and from international destinations.

The scope of this report does not include other Qatar Airways Group subsidiaries or joint ventures, Doha International Airport or activities outside of the State of Qatar.

## Contents

1	Our environmental commitment	4
2	Introduction from Qatar Airways Group Chief Executive	6
3	Environmental objectives and governance	8
4	About Qatar Airways Group	12
5	Achievements and partnerships	19
6	Energy and climate change	22
7	Waste	40
8	Water and land	45
9	Noise and air quality	54
10	Nature and conservation	58
11	Environmental data table	62
12	Footnotes and references	63
13	Assurance statement	65



# Our environmental commitment 1

---

At Qatar Airways Group, we believe in our responsibility to care for the environment.

We are committed to demonstrating environmental leadership through our global airline and airport operations, aviation and catering services, retail outlets and hotels.

We will openly communicate our environmental performance to develop the trust on which long-term environmental leadership is built.

#### We commit to:

- ⑤ Achieve lower and more efficient greenhouse gas emissions to help tackle climate change
- ⑤ Reduce, re-use and recycle waste, manage noise and control emissions to air and water to reduce our impact on the local environment wherever we operate
- ⑤ Support conservation and consume energy, water and materials efficiently to help protect natural resources

---

We are proud to support and actively pursue the Qatar National Vision for 2030<sup>i</sup>. Our environmental policy is set within the context of the National Vision's environmental principle:

*'to maintain a balance between economic and social development and ways of protecting the environment'.*



## Introduction from Qatar Airways Group Chief Executive 2



As one of the world's leading airlines, Qatar Airways is committed to establishing a sustainable aviation industry.

While aviation plays a critical role in supporting economic development and facilitating global relationships, our industry also contributes towards environmental sustainability.

Qatar Airways is focussed on the development of local and international environmental solutions. Our investment in efficient aircraft and pursuit of fuel optimisation across our modern fleet demonstrates the leadership we provide in the drive for ever-more carbon efficient air travel.

We are active in meeting the environmental challenges facing air travel. While recognising the investment we have already made in fuel efficient aircraft, we play an active role in tackling climate change. We have a prominent position in establishing industry solutions to global threats, such as the illegal transportation of endangered wildlife, as well as introducing local initiatives, such as the management of cabin waste.

At our hub, Hamad International Airport, our management teams are leading ambitious energy, water and waste programmes to support the environmental pillar of Qatar's Vision for 2030.

This year, we announced our intention for Qatar Airways to achieve IATA's *IEvA* environmental management certification, secured accreditation to the ACI's *Airport Carbon Accreditation Scheme*,

and we have been honoured at Buckingham Palace as an inaugural signatory to the *United for Wildlife Transport Industry Declaration*.

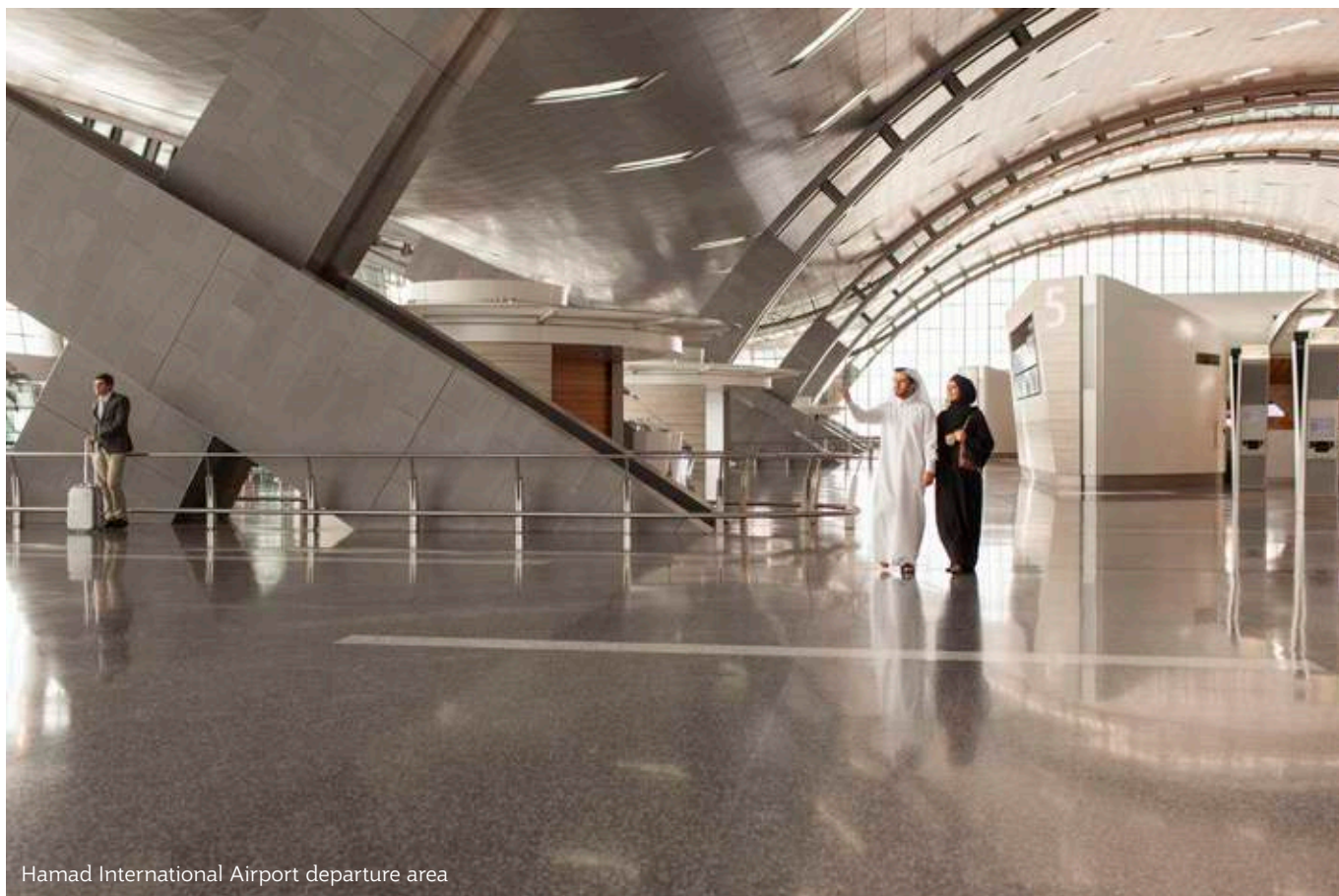
We have also set the foundation for continued improvements in environmental performance by creating a formal group-wide environmental governance framework to underpin our environmental agenda.

As our business continues to experience unprecedented growth, Qatar Airways is committed to managing the impact that our operations have on the local and global environment, and to communicating our performance accurately and transparently to those who have an interest in our ongoing success.

I am proud of Qatar Airways' environmental achievements and determined that we will continue to provide the vision and leadership required to establish a truly sustainable aviation industry, both internationally and within the State of Qatar.



H.E. Mr. Akbar Al Baker  
Qatar Airways Group Chief Executive



Hamad International Airport departure area

## Environmental objectives and governance 3

During 2015, more than 150 employees representing all divisions of Qatar Airways Group participated in workshops to create shared environmental objectives.

The environmental impacts associated with our business activities were mapped with both legal requirements and stakeholder expectations to provide the foundation for Qatar Airways Group's environmental strategy.



## Qatar Airways Group environmental objectives

### Energy & climate change

- Pursue the adoption of low carbon energy sources
- Optimise energy demand through technology and operational practices

### Waste

- Minimise waste generation by adopting efficiency principles in design, procurement and operational planning
- Reduce waste disposal by re-using, recycling and recovering energy from unwanted products and materials
- Manage the risk associated with hazardous waste to a level that is as low as reasonably practicable

### Water & land

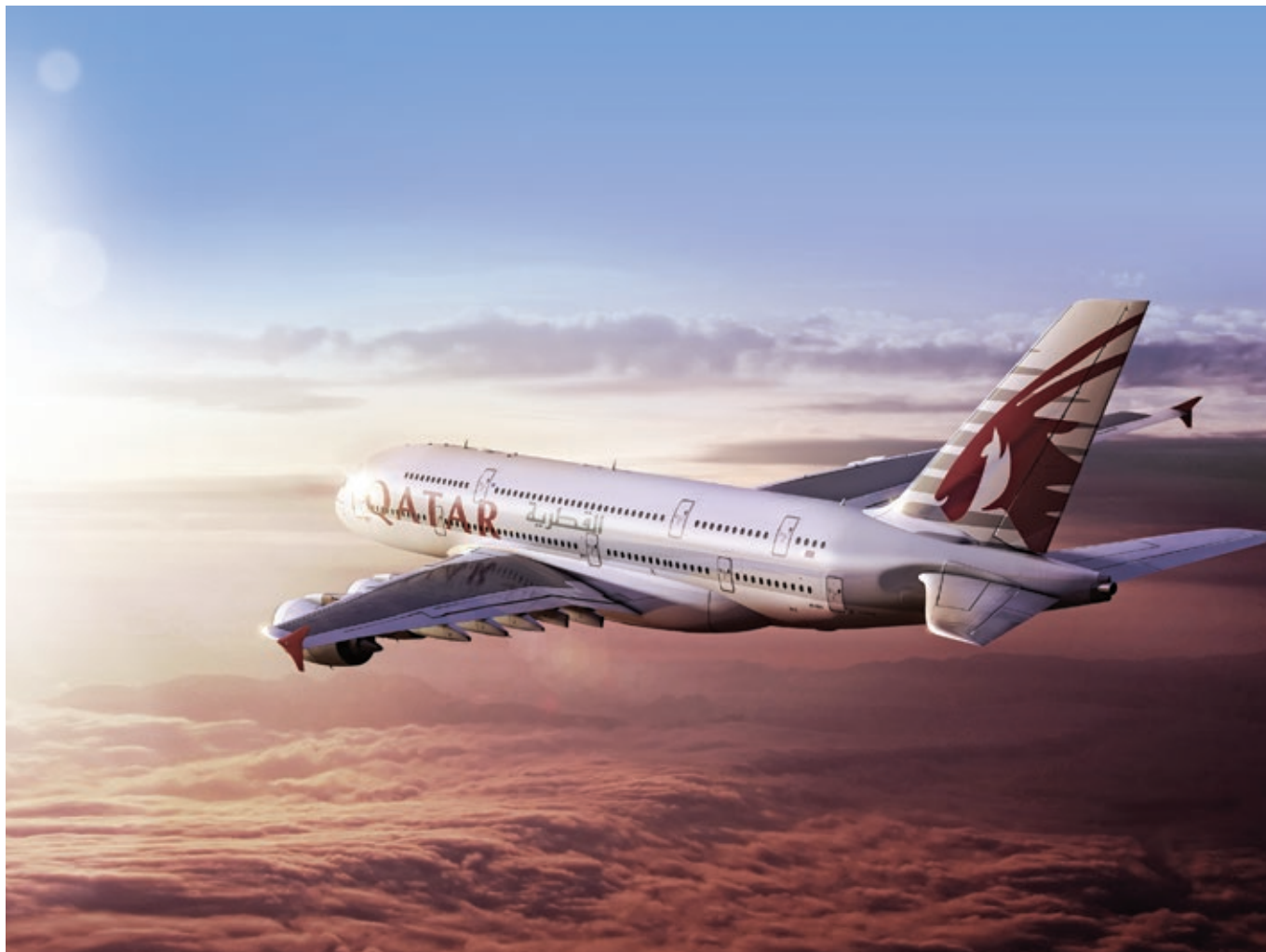
- Optimise water demand through technology and operational practices
- Adopt effective controls to prevent the contamination of water and land

### Noise & air quality

- Comply with noise regulations and operational procedures
- Quantify and limit the impact that aircraft, vehicles and equipment have on air quality

### Nature & conservation

- Manage wildlife sensitively and invest in conservation projects
- Create opportunities to use sustainably sourced and low environmental impact materials within our supply chain



---

Our business leaders and management teams are committed to working together to deliver Qatar Airways Group's environmental objectives by:

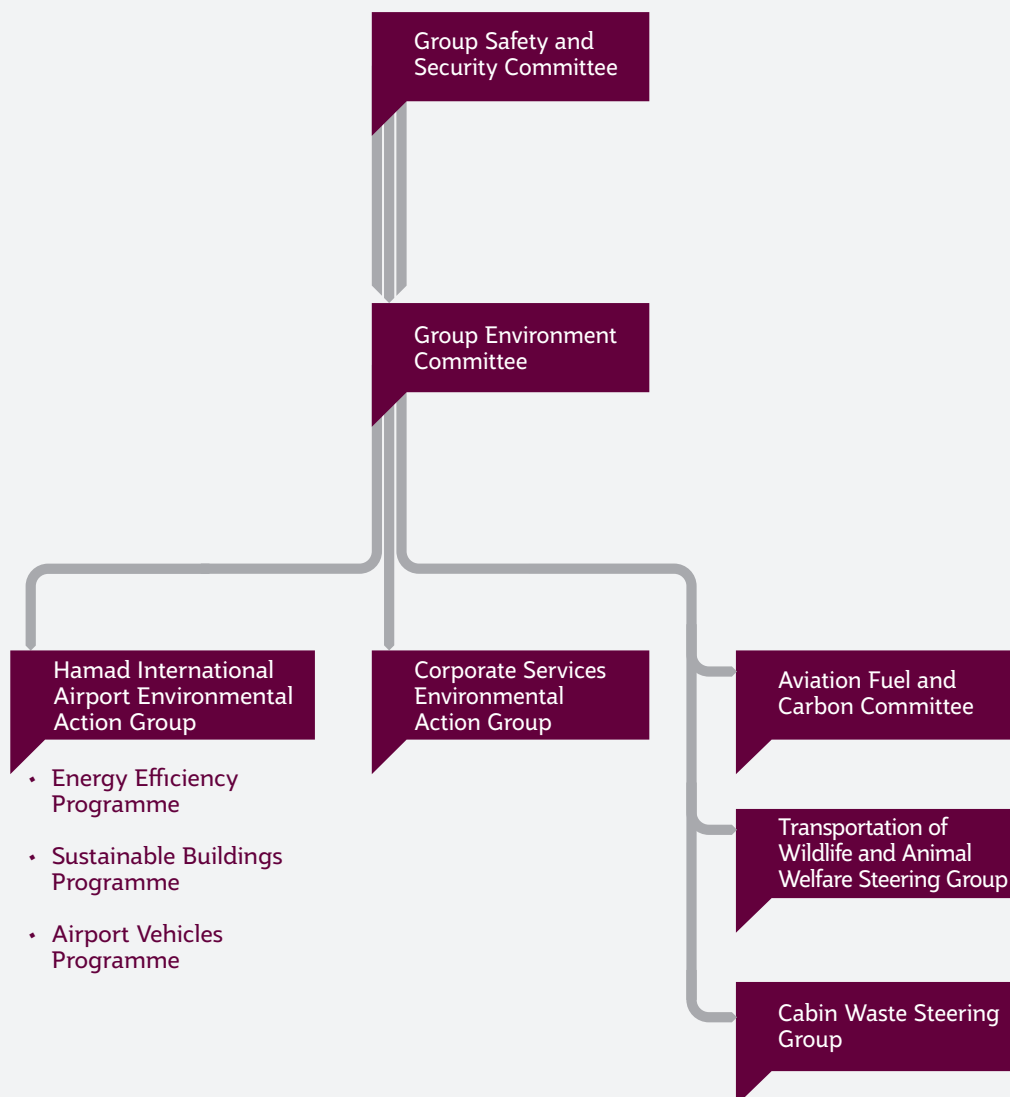
- 
- ⑤ Considering environmental issues during business planning
  - ⑤ Embedding environmental management within operational procedures
  - ⑤ Integrating environmental requirements within procurement decisions
  - ⑤ Incorporating environmental expectations within personal responsibilities and training
-

---

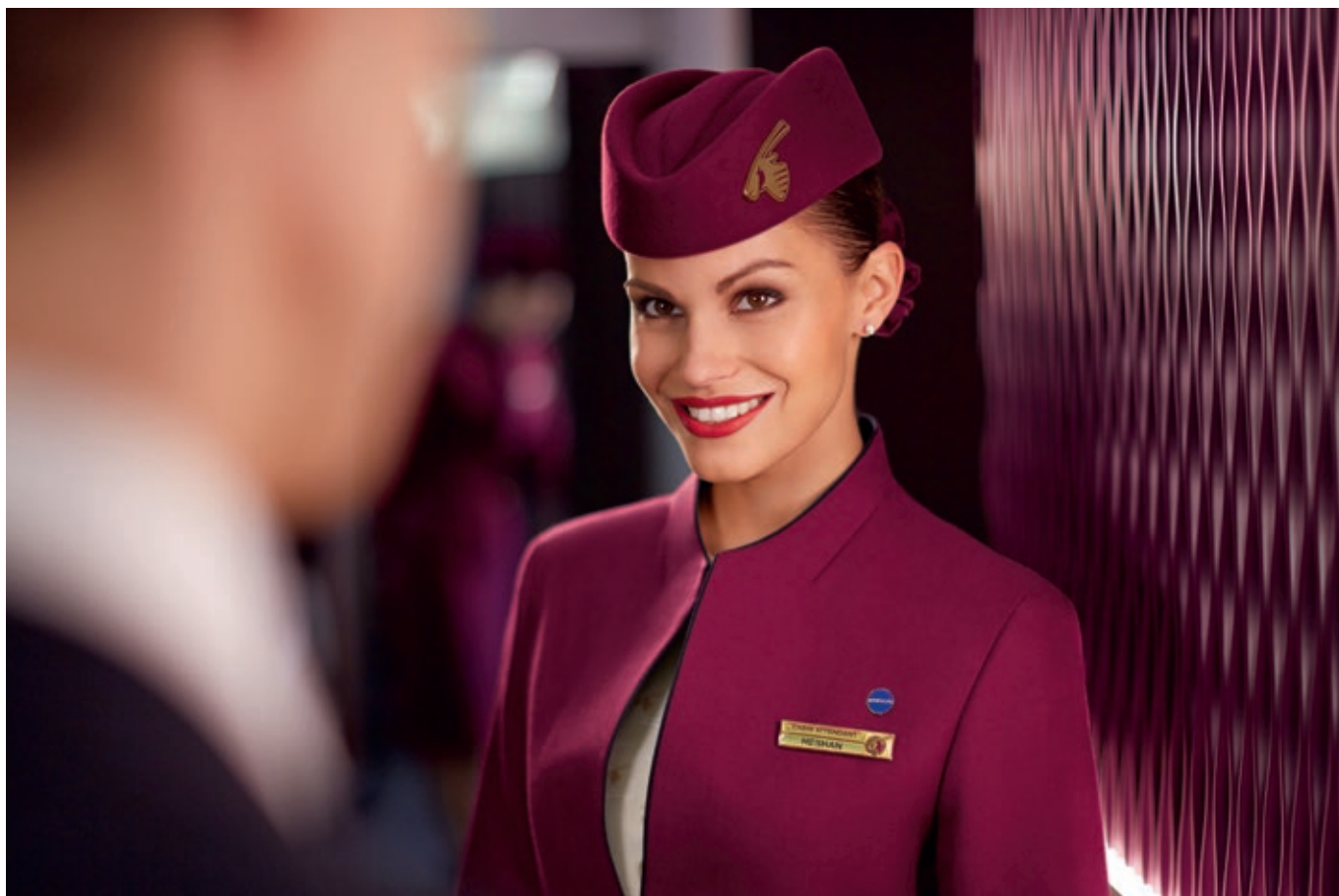
## Environmental governance framework

Qatar Airways Group aims to prevent pollution and continually improve environmental performance through the adoption of a formal environmental management system.

As part of this, we introduced a group-wide governance framework to enable our business leaders to review progress in delivering our environmental objectives and to support the continual improvement of our environmental performance.



Qatar Airways Group's environmental governance framework is shown above.



## About Qatar Airways Group

4

Based in Doha, Qatar, and flying to more than 150 global destinations, service and excellence is delivered by more than 39,000 employees within a range of world-class, international businesses.





Qatar Airways' Boeing 777 simulator



## Qatar Airways Group divisions included within this report



### Qatar Airways

Qatar Airways is the national airline of the State of Qatar and an industry success story. Qatar Airways is one of the world's fastest growing airlines operating one of the youngest fleets in the sky.



### Qatar Airways Cargo

As the world's third largest international cargo carrier, Qatar Airways Cargo uses the latest automated tracking technology to meet the growing demand for high-value and time-critical air freight services.



### Hamad International Airport

As the international five-star gateway to Qatar and the rest of the world, Hamad International Airport's state-of-the-art facilities, welcoming atmosphere and friendly persona redefine the way customers travel and do business.



### Qatar Aircraft Catering Company

Qatar Aircraft Catering Company prepares award-winning catering and fine dining exclusively to Qatar Airways and other airlines using Hamad International Airport.



### **Qatar Aviation Services**

Qatar Aviation Services delivers world-class ground handling services to 38 airlines, including Qatar Airways, and provides passengers with a seamless experience through Hamad International Airport.



### **Qatar Duty Free**

As one of the fastest growing duty free retailers in the world, Qatar Duty Free brings together the world's leading brands and bespoke shopping concepts to appeal to every customer travelling through Hamad International Airport.



### **Qatar Executive**

Qatar Executive provides private jets for business and pleasure travel. The service enables travellers to book a luxurious aircraft for travel to global destinations in as little as four hours before departure.



### **Qatar Distribution Company**

The Qatar Distribution Company is Qatar's licensed retail distributor. The store has a wide range of beverages that can be purchased by licensed hotels and qualifying private individuals.

---

## About Qatar Airways

By 31<sup>st</sup> March 2016, Qatar Airways' fleet had grown to 180 aircraft with plans for a further 300 aircraft.<sup>z</sup>

Adding 13 new destinations during 2015-2016, Qatar Airways' global network reached more than 150 worldwide destinations.

Qatar Airways Cargo operated 16 dedicated cargo freighters direct to more than 54 global destinations during 2015-2016 and became the world's third largest air-cargo operator in October 2015.

By 31<sup>st</sup> March 2016, Qatar Airways employed 23,800 people, with approximately 90 percent based in Doha and the remainder located at our worldwide destinations. Qatar Airways has four major office locations in Doha: Qatar Airways Towers; the Learning and Development Centre; the Integrated Training Centre; and the Cargo Technical Building, as well as the Qatar Airways Operational Control building and dedicated office space at Hamad International Airport.

**180**  
Aircraft\*

**26,654,000**  
Passengers

**150** direct destinations\*

**165,288** passenger flights

**954,191** tonnes of cargo

\* 31<sup>st</sup> March 2016

## About Hamad International Airport

# 156

direct destinations  
served\*

# 30 million

Passengers

**222,868** aircraft movements

**1,534,553** tonnes of cargo

**37** airlines served\*

Recognised in 2016 as one of the world's top 10 airports, Hamad International Airport is redefining customer experience for business and leisure travellers by working with its partners to offer a seamless travel experience. It is one of the most technologically advanced airport in the world with expansive retail options, leading dining facilities, exclusive lounges, a hotel and wellness centre, including a gym, squash court, swimming pool and spa.

Having opened in May 2014, Hamad International Airport's design adopts state-of-the-art technology and has been operated and maintained by 1,235 employees as of 31<sup>st</sup> March 2016.

\*31<sup>st</sup> March 2016

The airport terminal is the largest building in Doha, and welcomed more than 30 million passengers during 2015-2016. The airport's dual runways are able to accommodate the next generation of larger, more efficient aircraft and the airport is designed to handle up to 100 aircraft per hour. The airport serviced 222,868 aircraft arriving and departing during 2015-2016.

The airport's maintenance hangar is one of the world's largest free-standing hangars with the capacity to service up to 13 aircraft simultaneously.

The dedicated cargo facility can handle up to 5,700 items at the same time and in 2015-2016 processed 1,534,553 tonnes of cargo.

## About our other businesses

Qatar Airways Group's other businesses ensure that Qatar Airways and Hamad International Airport provide a seamless, world-class service to customers both in the air and on the ground

## Qatar Aviation Services

19,119,718

Passenger bags handled

26,108

Live animal deliveries managed

1.7 million

Tonnes of cargo handled

\* 31<sup>st</sup> March 2016

1,330

Vehicles\*

## Qatar Aircraft Catering Company

33,611,000

Meals prepared

178

Vehicles\*

69,000 m<sup>2</sup>

Catering facility

More than 350 specialist chefs

## Qatar Duty Free

5,673,601

Customers served

16

Vehicles\*

22

Restaurants\*

73

Stores\*



## Achievements and partnerships 5





### Airport Carbon Accreditation

In November 2015, Hamad International Airport attained the official *Mapping* level of the Airports Council International Airport Carbon Accreditation programme<sup>ii</sup>.

This accreditation acknowledges Hamad International Airport's commitment to tackle climate change and includes the airport's carbon emissions from its first day of opening in 2014.



### IEnvA

In December 2015, Qatar Airways launched a programme to attain full certification to *IEnvA*, the International Air Transport Association's Environmental Assessment scheme<sup>iii</sup>.

Full certification will be attained by December 2017 and will cover all aspects of Qatar Airways' operations, including aircraft during flight, catering and cabin services, ground operations and corporate activities.



### United for Wildlife

In March 2016, Qatar Airways signed the United for Wildlife Transport Industry Declaration at Buckingham Palace in the presence of HRH The Duke of Cambridge and The Rt. Hon. the Lord Hague of Richmond<sup>iv</sup>.

Qatar Airways was one of a small group of aviation industry leaders invited to attend the signing ceremony in London, acknowledging the scale and complexity of the challenge of illegal wildlife transportation.

## Industry collaboration on sustainable aviation

Qatar Airways is an active participant within the airline industry's most influential environmental bodies.



### IATA Environment Committee

The International Air Transport Association's Environmental Committee and working groups focusing on climate change, wildlife transportation, cabin waste and alternative fuels<sup>v</sup>.



### AACO Environmental Policy Group

The Arab Air Carrier Organisation's Environmental Policy Group, contributing to the development of regional and global aviation environmental policy<sup>vi</sup>.



### SAFUG

The Sustainable Aviation Fuel User Group, engaging airlines with an interest in developing and using sustainable aviation fuels<sup>vii</sup>.





## Energy & climate change

6

Man-made climate change is due to an increase in greenhouse gas emissions, most notably carbon dioxide (CO<sub>2</sub>), generated mainly from burning fossil fuel.

The resulting increase in the Earth's average temperature is likely to raise sea levels and change weather patterns with wide ranging consequences for human society and the natural environment.

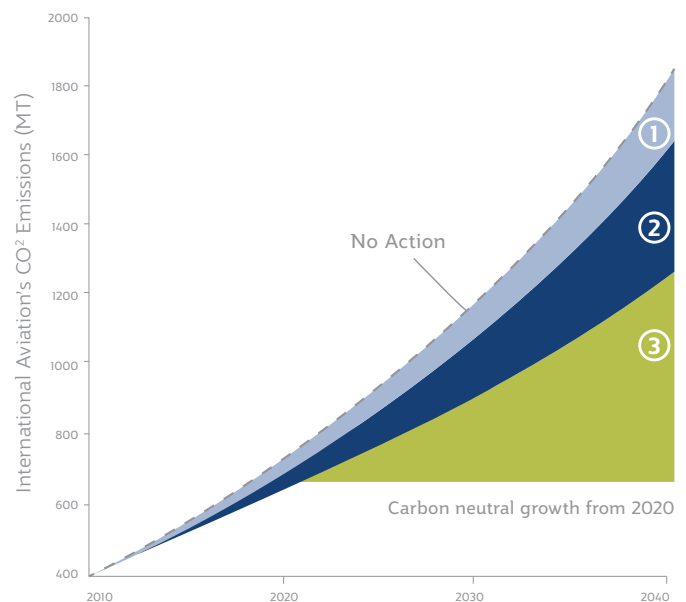
## Aviation's climate goals

The International Air Transport Association (IATA) has adopted a set of ambitious targets to reduce CO<sub>2</sub> emissions from aviation<sup>viii</sup>:

- Improve aviation fuel efficiency by 1.5 percent each year from 2009 to 2020
- Achieve carbon neutral growth in international aviation from 2020
- Reduce net CO<sub>2</sub> emissions by 50 percent by 2050 against 2005 baseline

The aviation industry has projected the contribution that three strands of activity will make to achieve carbon neutral growth from 2020:

- ① Infrastructure improvements, including modernised air traffic management
- ② New aircraft technology
- ③ Sustainable alternative fuel and a global market based measure



Aviation's plan to achieve carbon neutral growth from 2020 is illustrated above<sup>ix</sup>.

## How a global market-based measure might work

In October 2016, the International Civil Aviation Organisation (ICAO) will decide whether to introduce a scheme to deliver carbon-neutral aviation growth beyond 2020<sup>x</sup>.

As aviation will rely on fossil fuels for the foreseeable future, ICAO's proposal involves airlines paying other industries to reduce CO<sub>2</sub> emissions to compensate for the growth in aircraft emissions beyond 2020.

More than 190 nations are represented in ICAO, and each will have a say in how the cost of offsetting each additional unit of carbon above the 2020 baseline level will be allocated.

Consideration is being given to ensure the scheme is fair to developing nations and those who rely heavily on aviation due to their geographic circumstances.



---

## Group-wide objectives

Our energy and climate change objectives are to:

- 
- Pursue the adoption of low carbon energy sources
  - Optimise energy demand through technology and operational practices
- 

---

## Carbon efficiency trends

---

### Our carbon footprint

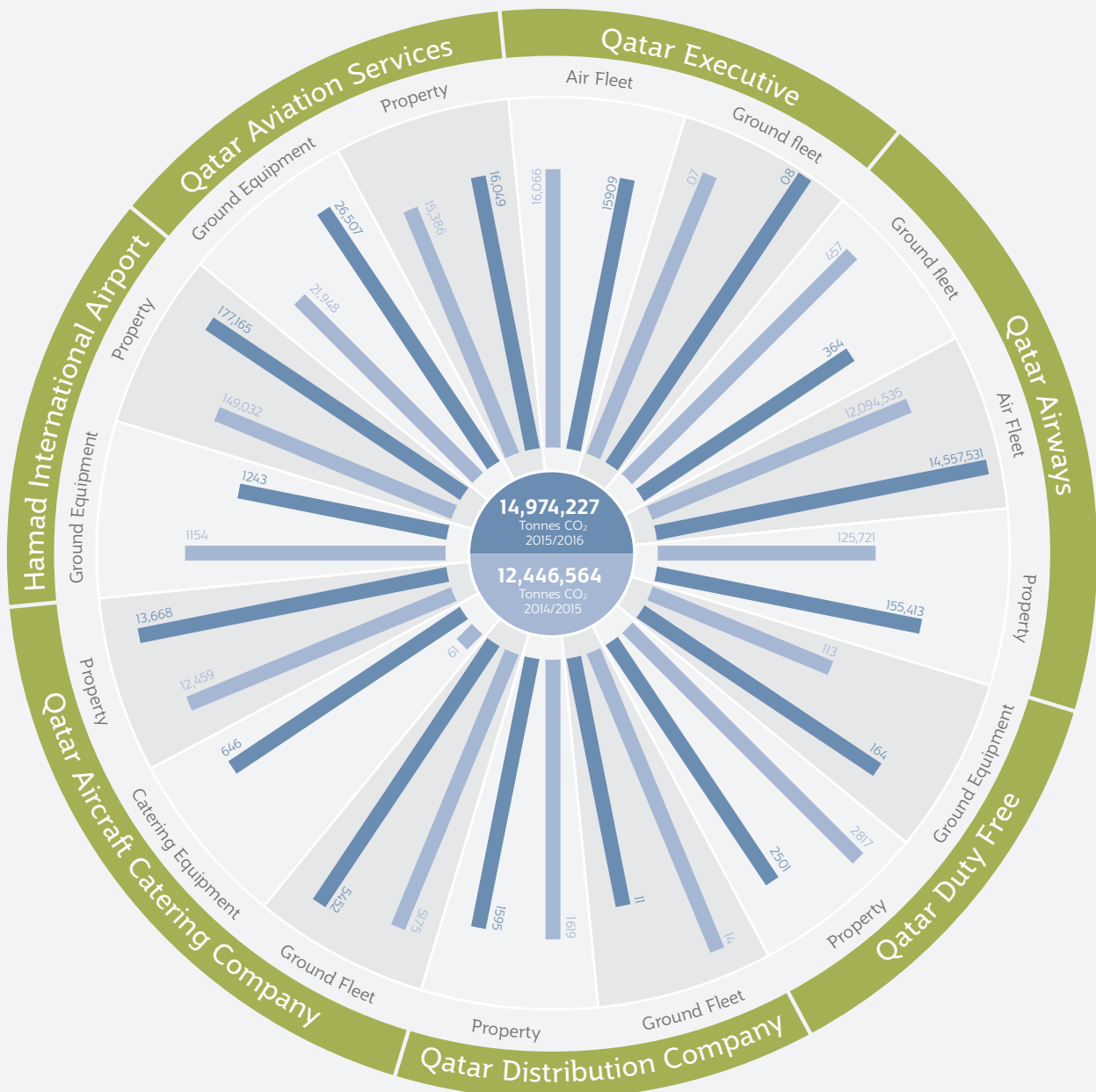
To help meet Qatar Airways Group's commitment to achieve lower, more efficient greenhouse gas emissions, we prepare and verify our carbon footprint annually.

Being a rapidly growing business, Qatar Airways Group's total CO<sub>2</sub> emissions have increased over the past year and will continue to rise, although our operations are expected to become increasingly efficient.

As aviation fuel comprises more than 97 percent of Qatar Airways Group's total CO<sub>2</sub> footprint, the expansion of Qatar Airways' airline operations represents the most significant contribution to the growth in emissions.

With electricity contributing 2.4 percent of Qatar Airways Group's total CO<sub>2</sub> emissions, the rapidly expanding operations of Hamad International Airport are also meaningful.

## Qatar Airways Group CO<sub>2</sub> emissions by business and activity

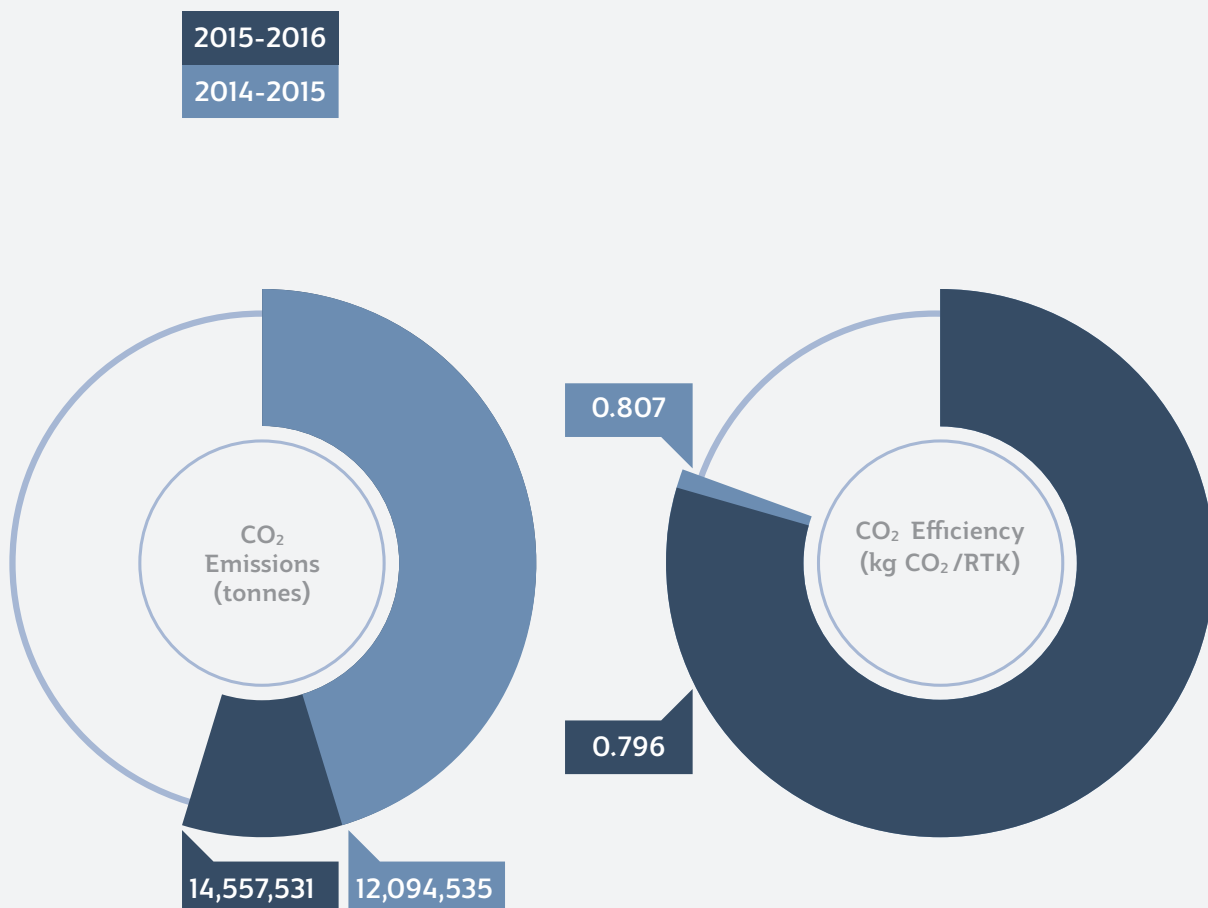


The CO<sub>2</sub> emissions generated by Qatar Airways Group during 2014-2015 and 2015-2016 are illustrated above.

## Qatar Airways' CO<sub>2</sub> emissions

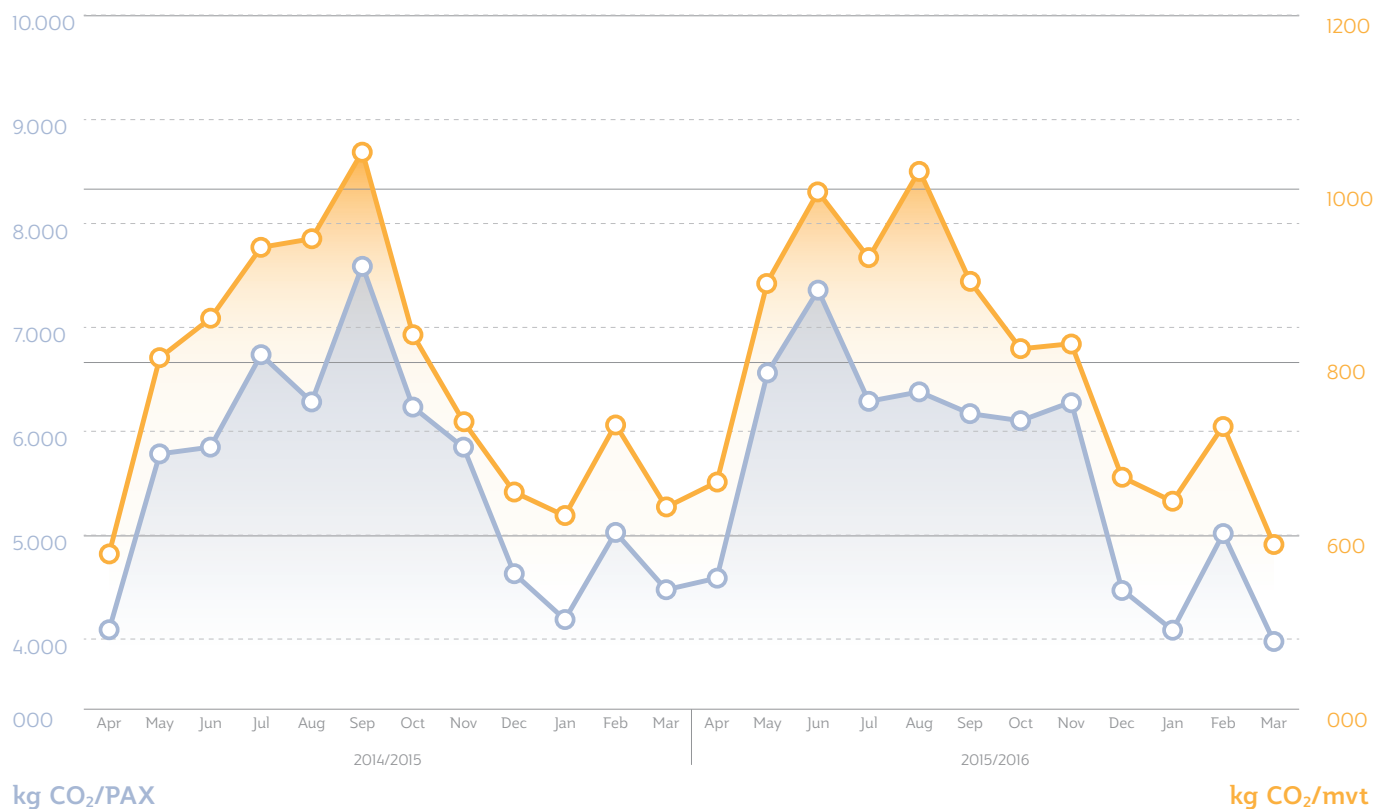
While Qatar Airways continues to expand its airline operations, it does so more efficiently. The aviation industry measures carbon efficiency in CO<sub>2</sub> generated as a result of transporting the weight of passengers and cargo per kilometre. This is known as Revenue Tonne Kilometre (RTK). Qatar Airways improved average CO<sub>2</sub>/RTK efficiency by 1.4 percent during 2015-2016 compared to 2014-2015.

Qatar Airways' CO<sub>2</sub> emissions and CO<sub>2</sub> efficiency for 2014-2015 and 2015-2016 are illustrated below.



## Hamad International Airport's CO<sub>2</sub> emissions

Since Hamad International Airport opened in 2014, its operations have expanded rapidly, and efficiently, to accommodate the growth in demand for travel through Doha. The airport industry measures carbon efficiency in weight of CO<sub>2</sub> per arriving, departing and transit passenger and also per aircraft landing and taking-off. Hamad International Airport improved the average efficiency of CO<sub>2</sub> per passenger by 4.0 percent and per aircraft movement by 1.2 percent during 2015 compared to 2014.

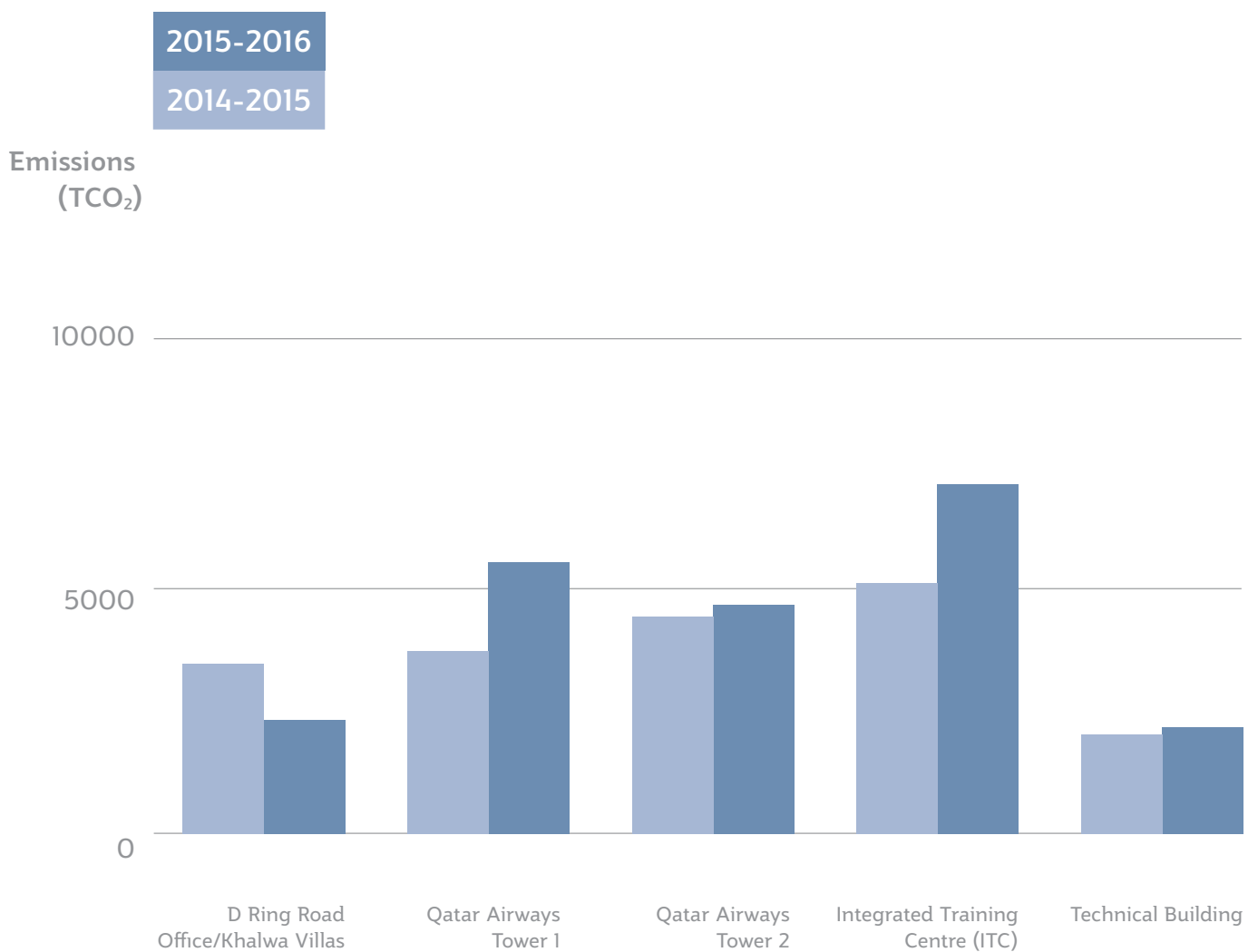


Hamad International Airport's CO<sub>2</sub> efficiency per passenger and per aircraft movement.

## Commercial property CO<sub>2</sub> emissions

Supporting the growth in Qatar Airways Group has relied on an increased utilisation of commercial office facilities in Doha. This has increased total CO<sub>2</sub> emissions from the consumption of energy in commercial buildings by 16 percent between 2014-2015 and 2015-2016.

Qatar Airways Group's CO<sub>2</sub> emissions from electricity consumed in commercial properties are illustrated below.







Solar shading on Qatar Airways technical hanger

---

## Climate change initiatives

Qatar Airways operate one of the most modern, efficient fleets in the sky.

---

### Efficient fleet

With plans for over 300 new aircraft,<sup>z</sup> and the on-going application of the most innovative technology, Qatar Airways is committed to operating one of the most fuel-efficient fleets.

With 77 Boeing and 103 Airbus aircraft operating at 31<sup>st</sup> March 2016, the average age of the fleet was 5.4 years.

We have a commitment to add 72 new Airbus A350 XWB aircraft to our fleet and 80 Airbus A320neo family aircraft. These aircraft create 35 percent and 20 percent less carbon emissions than the generation of aircraft they replace.

---

### Efficient technology

Winglets increase fuel efficiency by up to four percent by reducing aerodynamic drag<sup>xi</sup>. These small fin-like surfaces mounted almost vertically at the tip of an aircraft's wing save fuel by literally slashing through the air. The optimal effect is during mid-to-long-range flights, when cruising speed is sustained for longer periods.

In 2016, Qatar Airways tested a retrofitted sharklet (the name Airbus gives to wing tips) to one of its Airbus fleet. This saved 4.6 tonnes of fuel / 14 tonnes CO<sub>2</sub> during the first week of operation.



Winglet of Qatar Airways Airbus A350 aircraft

---

## Weight reduction

The International Air Transport Association estimates that a reduction of 10 kilogrammes in weight can reduce CO<sub>2</sub> emissions by an average of four tonnes per aircraft per year<sup>viii</sup>.

During 2015-2016 Qatar Airways weight reduction initiative has delivered significant fuel savings.

---

### Fuel planning

Careful planning of the quantity of the safe level of contingency fuel needed for each flight and engaging pilots to understand and agree the quantity of extra fuel taken on board optimises the weight of fuel and reduces the amount of fuel used during flight.

Saving during 2015-2016:  
3,637 tonnes of fuel  
11,457 tonnes of CO<sub>2</sub>

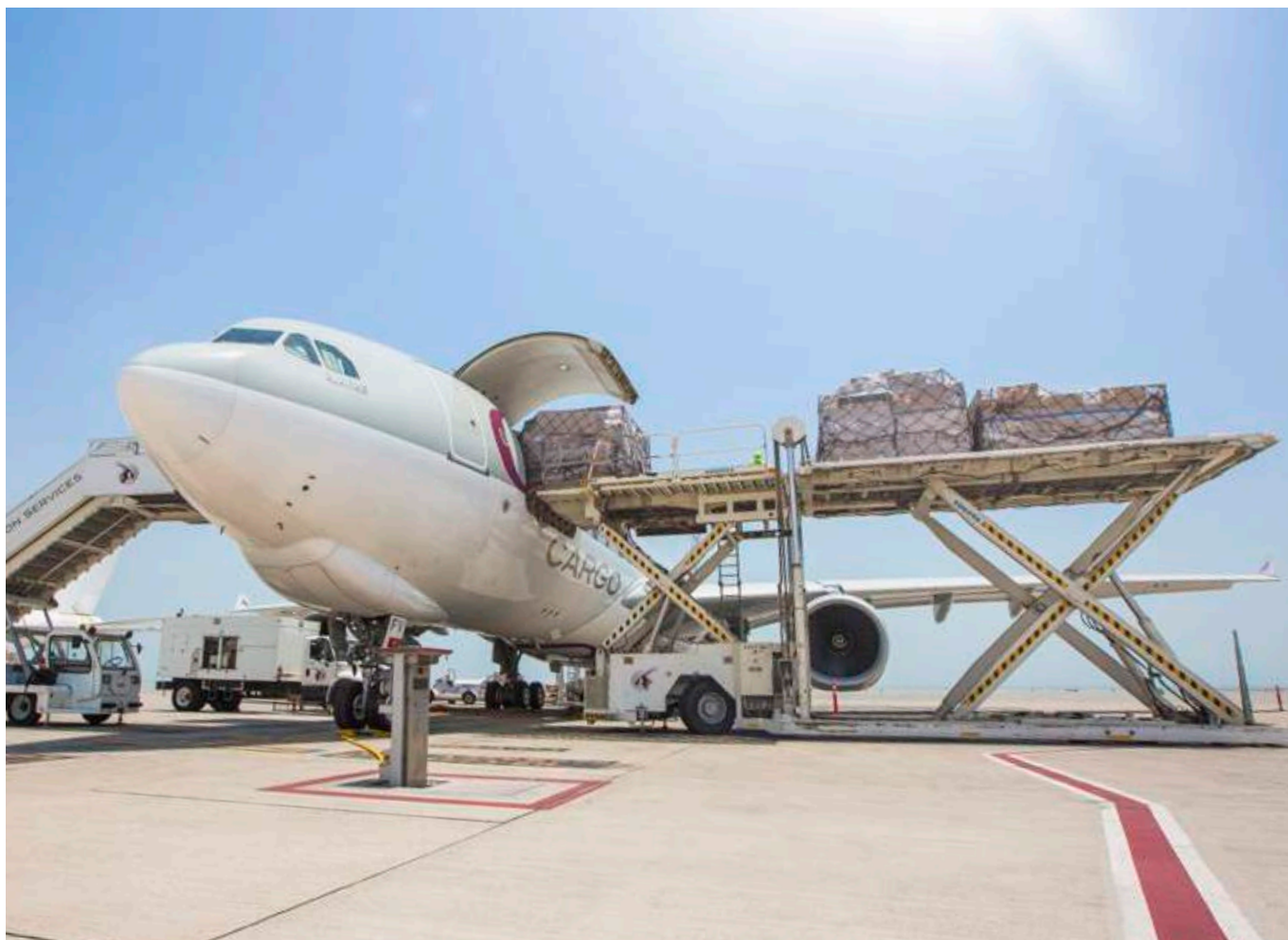
---

### Maintaining Doha International Airport

By maintaining Doha International Airport (DIA) as an international aerodrome with Air Traffic Control and full Rescue and Fire Fighting services, pilots may consider DIA as an alternate aerodrome for diversions. The weight saving from carrying less contingency fuel reduces the amount of fuel used during flight.

Saving during 2015-2016:  
4,576 tonnes of fuel  
14,415 tonnes of CO<sub>2</sub>





Loading Qatar Airways Cargo aircraft

### Potable water

Following a study into the amount of potable water used on Qatar Airways flights, new procedures were introduced to calculate the optimal quantity of water to be uploaded based on the aircraft type and destination.

Saving during 2015-2016:  
733 tonnes of fuel  
2,312 tonnes of CO<sub>2</sub>

### Surplus magazines

A review of the number of magazines requested by passengers found that, on many flights, the quantity being carried was surplus to requirements. New procedures allowed a reduction in the number of magazines being carried without impacting customer experience. Reductions achieved are on average 10 kilograms of weight per flight.

Saving during 2015-2016:  
237 tonnes of fuel  
748 tonnes of CO<sub>2</sub>



---

## Ground operations

The fuel used for aircraft on the ground is significant and offers an opportunity to reduce CO<sub>2</sub> emissions through improved efficiency.

---

### Reduced Engine Taxiing

Our pilots perform reduced engine taxi on arrival, shutting down at least one engine after landing, reducing the fuel consumed when taxiing to aircraft stands.

Saving during 2015-2016:  
2,100 tonnes of fuel  
6,618 tonnes of CO<sub>2</sub>

---

### Reduced use of Auxiliary Power Units (APUs)

APUs are small, on-board engines that provide power and cooling while an aircraft is waiting at a stand. By working closely with Hamad International Airport, Qatar Airways pilots are able to limit the use of APUs through connecting to electrical power and preconditioned air provided by the airport. APU use has been reduced by 23 percent during 2015-2016.

Saving during 2015-2016:  
12,513 tonnes of fuel  
39,417 tonnes of CO<sub>2</sub>



Providing pre-conditioned air to Qatar Airways aircraft

---

## Algae biofuel research

The innovative Algae Biofuel Project involved investment from Qatar Airways, Qatar University and Qatar Science and Technology Park, with research led by Qatar University's Centre for Sustainable Development. The project identified and mapped 98 strains of algae local to the State of Qatar, classifying the productivity of each for biomass growth potential, resilience to local climatic conditions and potential as a biofuel feedstock.

Stage 1 of the project involved establishing indoor laboratories and an outdoor demonstration facility to cultivate, harvest and analyse large-scale micro-algae production with the potential to apply algae biomass to biofuel production. Stage 1 was completed in June 2015, and the development of a second stage of the project is under review.





Open raceway pond constructed and operated as part of the Algae Biofuel Project with 25,000 litre capacity for outdoor cultivation of micro-algae under Qatar's climatic conditions

---

## Sustainable design

Hamad International Airport's modern facilities were designed with environmental sustainability in mind. The airport central district cooling system is 15-20 percent more efficient than individual cooling units. Automatic louvres - shading which moves according to the position of the sun - prevent the terminal building from warming. Design features, which include motion-activated escalators and moving walkways further reduce energy demand.

As the airport makes plans for the future, a major extension to the airport terminal will be certified to the silver level of the international green building scheme *LEED* and will include over 11,000 m<sup>2</sup> of photovoltaic cells which are forecast to generate up to 2,885 MWh of energy per year.

---

## Energy efficiency

---

### Lighting

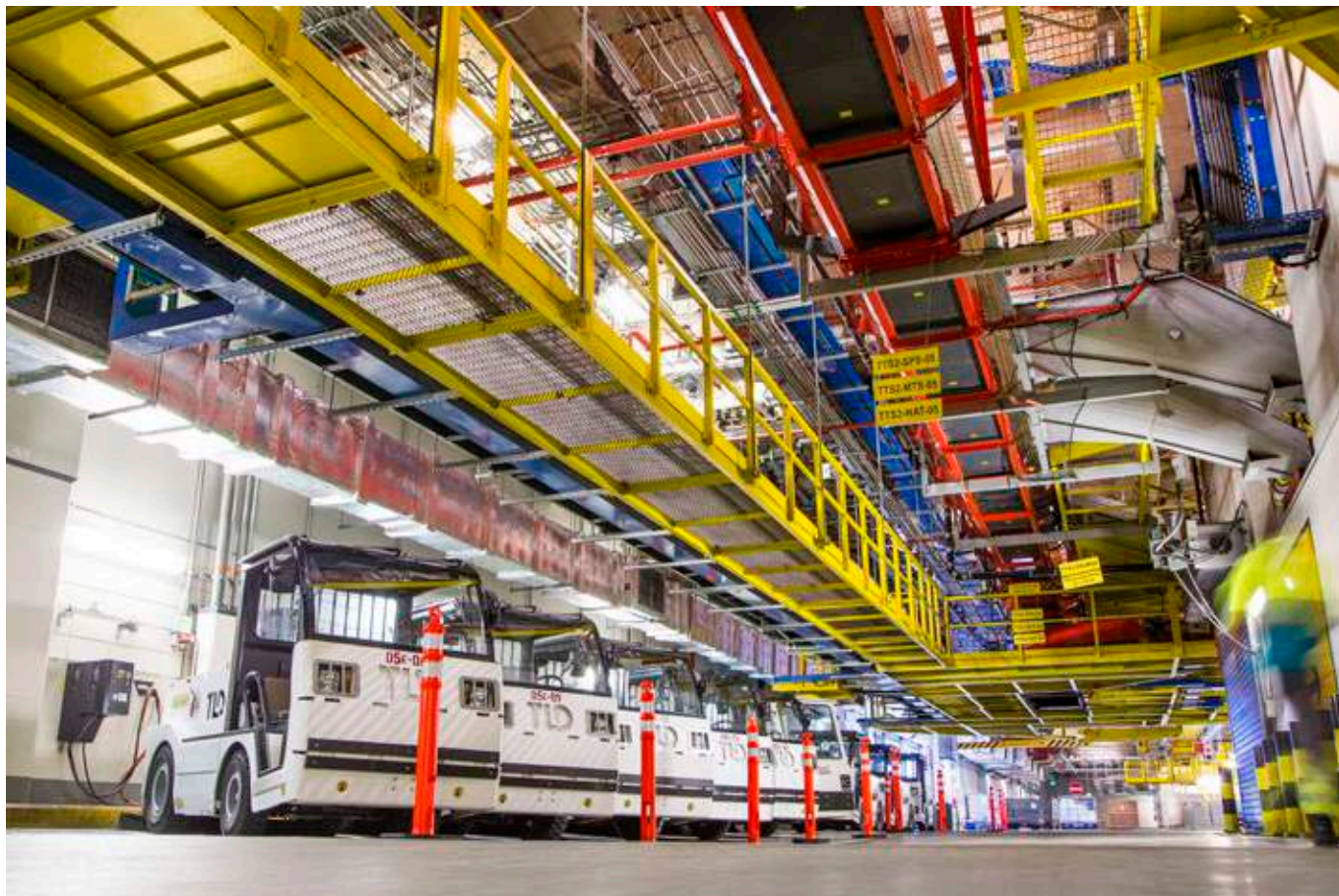
Plans have been made to replace metal-halide lamps with Light Emitting Diodes in Hamad International Airport's passenger transfer area which will save an estimated 190,500 kWh energy per year.

---

### HVAC systems

Modifications to heating, lighting, ventilation and air-conditioning systems across Hamad International Airport's campus have been identified to save an estimated 4,462,600 kWh energy per year.





Qatar Aviation Services' electric vehicles

## Vehicles

There are 1,970 vehicles operating within the airport's perimeter. In 2015, senior leaders from Hamad International Airport, Qatar Aviation Services, Qatar Airways and Qatar Aircraft Catering Company reviewed the use of airport vehicles.

The project aimed to maintain the smooth flow of traffic as ground operations continue to grow, enable fuel and carbon efficiency schemes to be effectively targeted and consider arrangements to introduce and decommission vehicles from airside operations.

The project's recommendations are being considered by a new Airport Vehicle Task Force, and include:

- Development of simulation model for airside traffic analysis
- Enhanced airside vehicle registration process
- Development of airside vehicle telematics



## Waste

7

The generation of waste puts pressure on scarce natural resources, incurs unnecessary financial cost and can risk damaging human health and the environment.

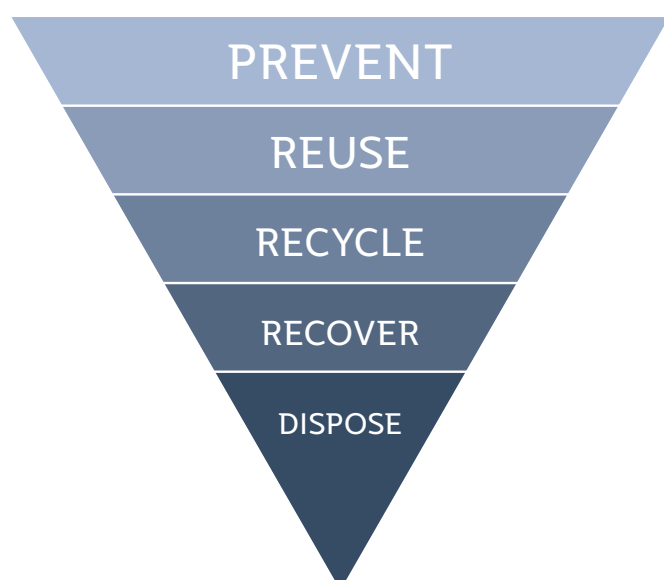
Effective waste management involves adopting a hierarchy of waste management options to guide investment in, and selection of, the right waste management solutions for local circumstances.

## Group-wide objectives

Our waste objectives are to:

- Minimise waste generated by adopting efficiency principles in design, procurement and operational planning
- Reduce waste disposal by reusing, recycling and recovering energy from unwanted products and materials
- Manage the risk associated with hazardous waste to a level that is as low as reasonably practicable

### The Waste Management Hierarchy



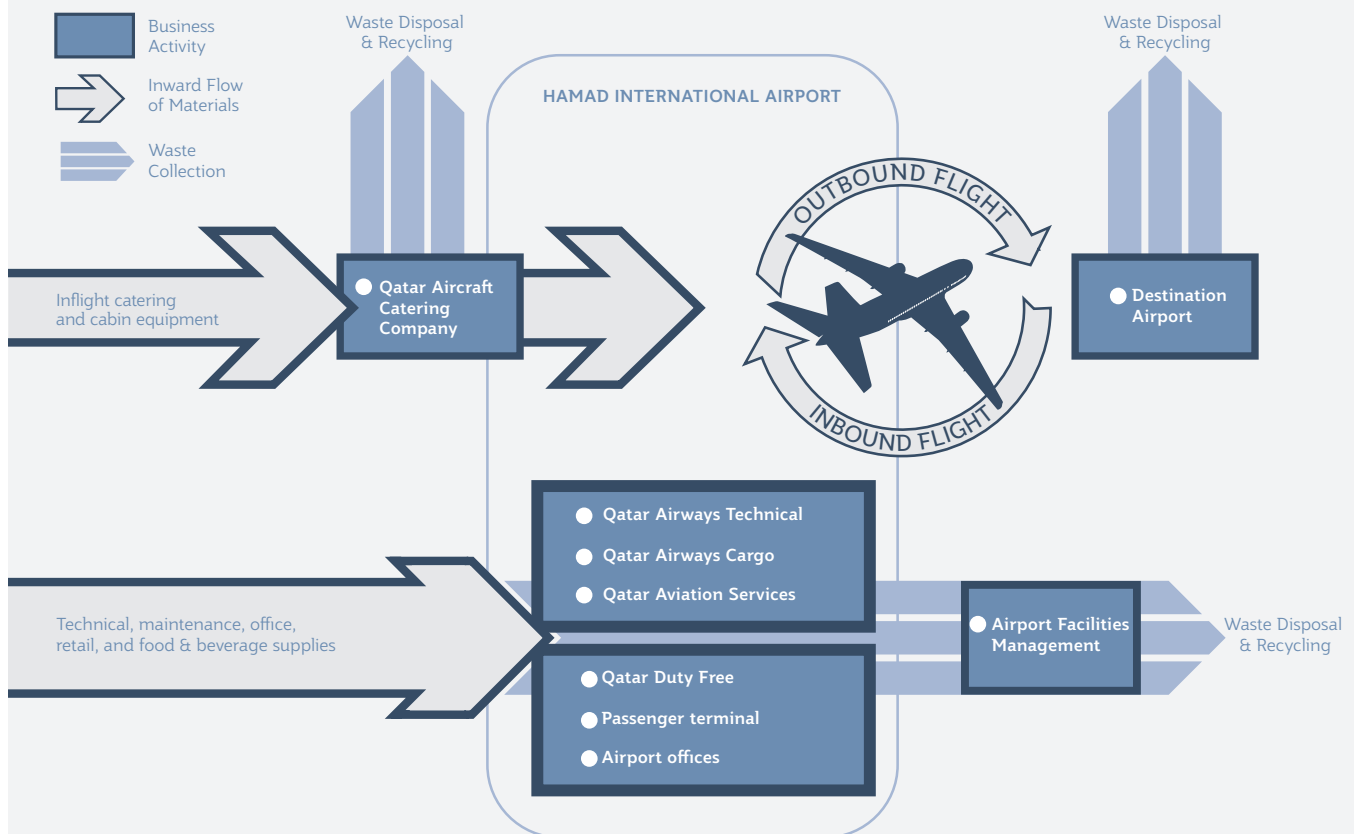
Smart product design and procurement, along with the elimination of excessive packaging, can minimise waste generation and reduce the costs associated with materials, manufacturing and transportation.

Unwanted items can be re-used by those who may need them. Recycling and composting enables the recovery of materials for other uses or for energy production.

Establishing and maintaining robust procedures for the collection, storage, transportation, treatment and disposal of waste improves re-use, recycling and recovery rates and reduces the risk of pollution.

Hamad International Airport manages the majority of airport waste contracts. Waste can be segregated at source by airport tenants or taken to the airport's central ancillary area to be segregated ready for collection by recycling contractors.

The flow of waste across Qatar Airways Group is illustrated below.



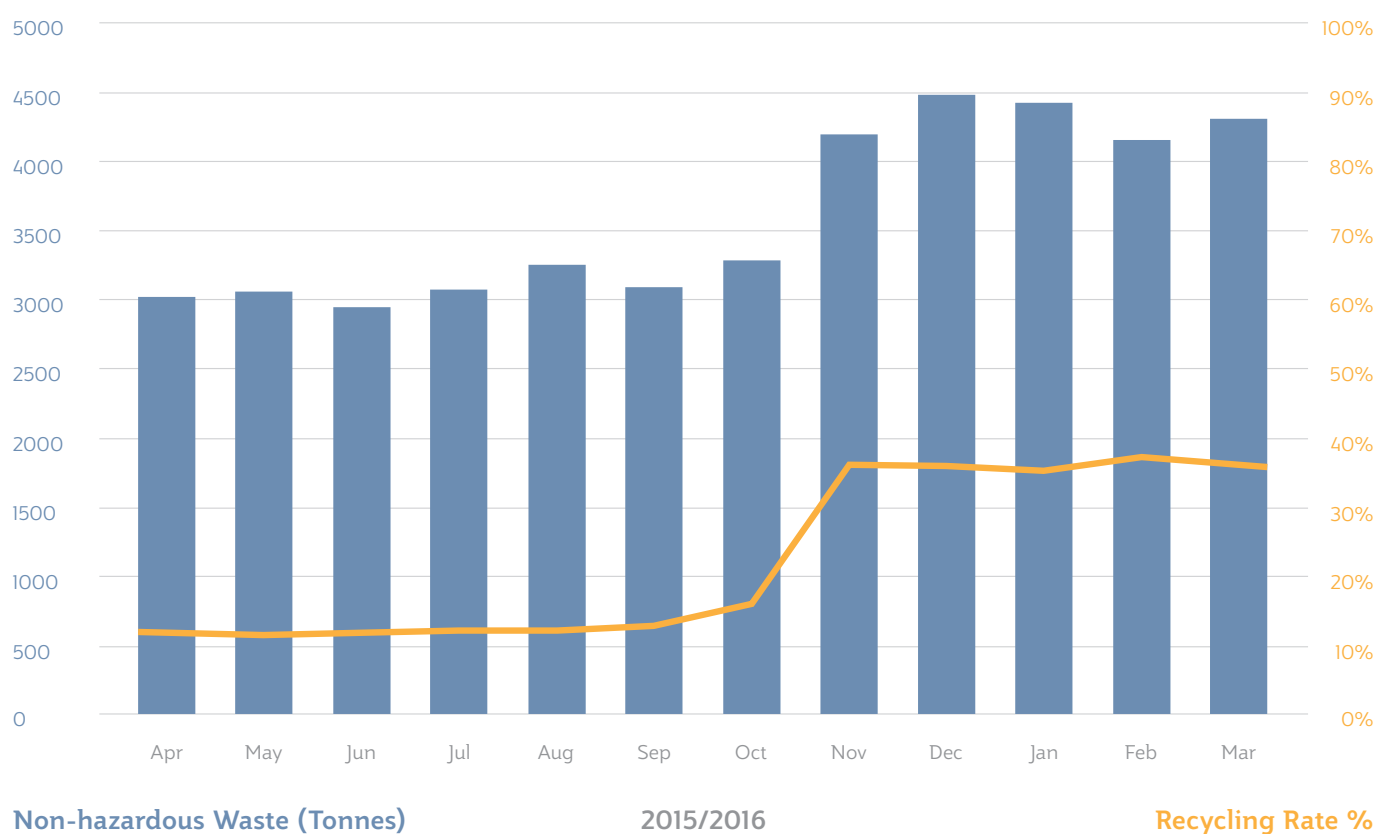
## Waste trends

To help us meet our commitment to reduce our impact on the local environment, we quantify the types and amounts of waste our activities generate and the disposal method.

The total waste generated at Hamad International Airport has begun to stabilise as the airport has become fully operational, and total waste per passenger is beginning to fall.

Recycling rates at Hamad International Airport have increased, with an average of 35 percent of non-hazardous waste recycled since November 2015.

The generation and recycling of non-hazardous waste at Hamad International Airport is illustrated below.





## Waste initiatives

Across Qatar Airways Group, new initiatives are being established to reduce, re-use and recycle unwanted goods and materials.

### Donating catering items

Qatar Airways In-Flight Catering team design award-winning menus for over 26 million passengers each year. As new and exciting options are introduced, certain food items may be discontinued.

In 2015, we partnered with Qatar's charity *RAF* to arrange for the collection of discontinued items for donation to local Doha food distribution charities. 171,090 individual food items have been donated since the scheme began in February 2016.

### Refurbishing IT equipment

Qatar Airways Information Technology Department work in partnership with the *Qatar Charity* to enable unwanted IT equipment to be refurbished and re-used by community groups.

During 2015, almost 600 items of IT equipment were donated for re-use and a further 300 donated for spare parts.

### Revenue from waste

As the supplier of catering for more than 165,000 Qatar Airways flights per year, Qatar Aircraft Catering Company manages large volumes of packaging and catering waste.

In March 2016, recycling contracts were established to generate revenue from the sale of recyclable materials including cardboard, used cooking oil, paper, plastic and foils.

### Hazardous waste management

Qatar Airways Technical Department use a variety of substances for aircraft maintenance which have the potential to be harmful to the environment. Great care is taken to segregate, store and transport hazardous waste, which includes aviation fuel, batteries, used oil, electrical waste, lamps and paints.

Waste oil and lubricants are pumped from the aircraft and collected in a special tank. Once full, handlers transport the tank to the airport's central waste area where it is decanted and transferred to a specialist contractor and taken for recycling.



## Water and land

8



Water pumping station at Hamad International Airport

## Water conservation

Water conservation is of national importance to Qatar as the region has one of the lowest levels of annual rainfall in the world. Qatar has three sources of water<sup>xii</sup>:

### Desalination

Seawater is desalinated through a costly and energy-intensive thermal process and accounts for over half of the water used in Qatar, with production quadrupling during the last two decades.

### Groundwater

Groundwater supplies provide a small but important contribution to Qatar's water network. The amount of groundwater being extracted is outpacing the amount flowing in.

### Recycled water

The volume of recycled water is increasing in Qatar and is used primarily for irrigation and in industry as a substitute for potable water.

## Group-wide objectives

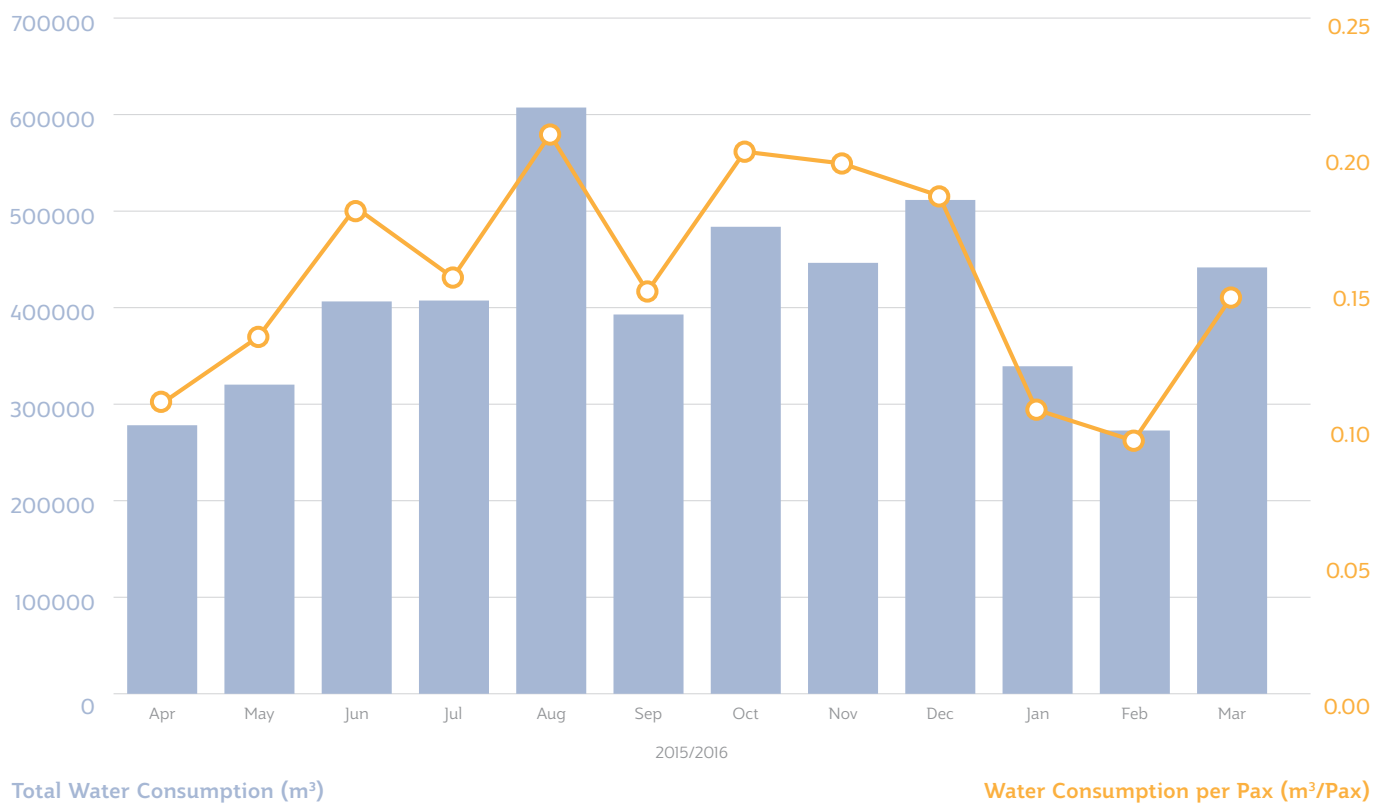
Our water conservation objective is to:

- Optimise water demand through technology and operational practices

## Water trends

To help us meet our commitment to protect natural resources, we measure water consumption as close to the end user level as possible so that we can monitor usage and identify conservation opportunities.

Total water consumption and consumption per passenger have remained relatively stable as Hamad International Airport has become fully operational.



Total water consumption and consumption per passenger at Hamad International Airport is illustrated above.





Vehicle washing station at Hamad International Airport

---

## Water initiatives

Across Qatar Airways Group, new initiatives are being established to reduce water consumption and make water conservation a central part of daily activities.



## Waste water treatment plant

Hamad International Airport's waste water treatment plant was commissioned in November 2014 and has a capacity to treat over 28,000m<sup>3</sup> of waste water per day. Waste water is transferred from across the airport campus to the hi-tech facility, where up to 95 percent of the water is returned for use in irrigation across the airport. The remaining five percent by-product (sludge) is further treated to extract the water content leaving less than one percent solid waste to be sent to landfill.

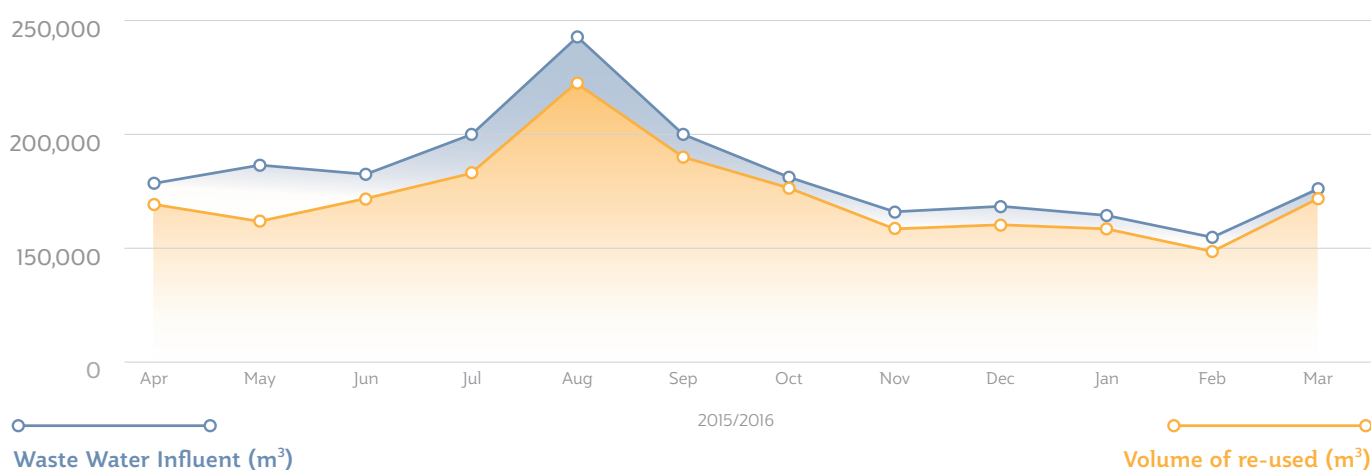
## Aircraft washing

Qatar Airways Technical Hangar at Hamad International Airport is equipped with an aircraft washing facility designed to treat waste water used in the washing bay to enable 70 percent to be re-used (30 percent is lost due to evaporation).

## Vehicle washing

Automatic water recycling systems have been installed for washing buses, trucks and vehicles. These use sand filtration techniques to enable recycling and re-use of water.

The volume of waste water treated and re-used at Hamad International Airport is illustrated below.





---

## Pollution prevention

Preventing pollution to land and water is a basic principle of good environmental management and is central to maintaining the quality of Doha's water table and coastal waters.

Pollution prevention involves adopting a duty of care in the selection of potentially hazardous substances, such as fuels, oils and chemicals, and establishing procedures for the transportation, storage and utilisation of these materials in a way that prevents uncontrolled release to the environment.

---

## Group-wide objectives

Our pollution prevention objective is to:

- 
- Adopt effective controls to prevent the contamination of water and land

---

## Pollution prevention trends

At Hamad International Airport, the quality of local water ways and natural surfaces are constantly monitored to provide an early warning system to prevent pollution. There were zero significant spillage incidents during 2015-2016.

Qatar Airways is certified to Stage 1 of the airline industry environmental management system *IEnvA*<sup>iii</sup>. In December 2015, we launched a programme to achieve full certification to *IEnvA*, covering pollution prevention across Qatar Airways' flights, ground operations and commercial property.



## Environmental monitoring stations at Hamad International Airport

### Pollution prevention initiatives

#### Hamad International Airport Consent To Operate

Hamad International Airport is regulated by the Ministry of Municipality and Environment through a Consent to Operate. This imposes strict conditions relating to the prevention of pollution to land and water which include:

- ③ Prohibition of discharge of oils, solids and measurable toxins to the Arabian Gulf or in storm water
- ③ Restrictions on the use of dispersants, surfactants and detergents
- ③ Prohibition of discharge of treated or untreated waste or storm water to the Arabian Gulf



---

## Pollution prevention at Qatar Airways' technical hangar

Maintenance activities, such as aircraft and engine washing, at Qatar Airways' technical hangar at Hamad International Airport generate waste water. Contaminated water is collected in a waste water foam pit before being pumped through drainage channels to a storage area ready for collection by recycling contractors. Robust maintenance regimes are followed to ensure the integrity of the closed system in order to protect the near-by coastal waters



Qatar Airways aircraft in technical hangar





## Noise and air quality

9

### Noise

While new aircraft are quieter, expanding and busier airports may change how local communities are affected by noise which can effect individuals in different ways.

Aircraft noise results from moving engine parts and air passing through the engine and over the aircraft's body and wings. Most airport noise relates to aircraft landing or taking off, taxiing and during engine testing.

## Group-wide objectives

Our noise objective is to:

- Comply with noise regulations and operational procedures

### Noise trends

To help us meet our commitment to reduce our impact on the local environment, we monitor our adherence to noise abatement procedures at every destination airport. We are also improving noise monitoring arrangements around Hamad International Airport.

The International Civil Aviation Organisation (ICAO) set progressively tighter noise certification standards for civil aircraft engines<sup>xiii</sup>. Described as Chapters these standards set the maximum permissible noise levels for aircraft during landing and take-off.

Aircrafts manufactured since 2006 must meet the requirements of ICAO's Chapter 4 and those manufactured after 2017 must meet the requirements of ICAO's next Chapter, known as Chapter 14.

As of the 31<sup>st</sup> March 2016, 100 percent of Qatar Airways aircraft achieved Chapter 4 requirements, while eight percent of our fleet already meet Chapter 14 requirements.

### Noise initiatives

#### ➤ Hamad International Airport Consent To Operate

Hamad International Airport is regulated by the Ministry of Municipality and Environment through a Consent to Operate. This imposes strict conditions relating to noise.

From 2016, Hamad International Airport will implement a programme to monitor noise levels in order to remain within set limits around the airport boundary. The noise monitoring locations are indicated on the map on page 52.



Air quality sampling at Hamad International Airport waste water treatment facility

## Air quality

Air quality in urban areas can be affected by emissions generated through burning carbon-based fuels. Airport-related activities, such as aircraft and vehicle movements, emit pollutants such as nitrogen oxides which, in high concentrations, can affect human health.

## Group-wide objectives

Our air quality objective is to:

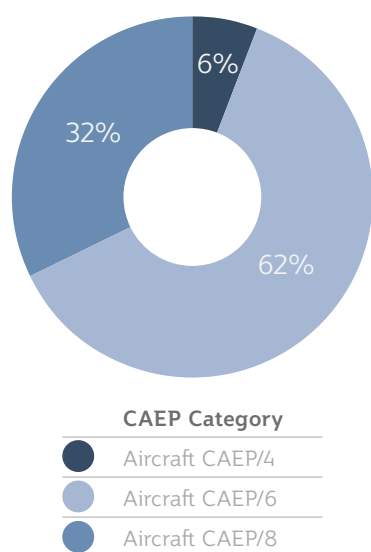
- Quantify and limit the impact that aircraft, vehicles and equipment have on air quality

### Air quality trends

To help us meet our commitment to reduce our impact on the local environment, we continue to invest in the most modern aircraft and are improving air quality monitoring arrangements around Hamad International Airport.

The International Civil Aviation Organisation (ICAO) Committee on Aviation Environmental Protection (CAEP) is responsible for setting standards on emissions from aircraft engines<sup>xiv</sup>. Based on lowering emissions of nitrogen oxides (NO<sub>x</sub>), the current standard (CAEP 8) requires 15 percent lower NO<sub>x</sub> emissions than the previous standard (CAEP 6).

The proportion of Qatar Airways' aircraft by CAEP standards 4, 6 and 8 as of 31<sup>st</sup> March 2016 is illustrated below.



### Air quality initiatives

#### ➤ Hamad International Airport Consent To Operate

Hamad International Airport is regulated by the Ministry of Municipality and Environment through a Consent to Operate. This imposes strict conditions relating to air quality.

From 2016, Hamad International Airport will implement a programme to monitor air quality with the intention of remaining within set limits around the airport boundary. The air quality monitoring locations are indicated on the map on page 52.

#### ➤ Electric vehicles

Qatar Aviation Services provide ground handling services for more than 300 passenger and cargo flights per day at Hamad International Airport. Such an extensive operation involves over 1,300 vehicles, ranging from baggage trucks to high aircraft loading trucks.

As of 31<sup>st</sup> March 2016, Qatar Aviation Services have invested in 66 electric vehicles. Using advanced polymer batteries unique in the airline industry, these batteries take two hours to charge instead of the normal eight hours. As well as eliminating the emission of air pollutants such as NO<sub>x</sub> and reducing CO<sub>2</sub>, these vehicles are easier to maintain.



## Nature and conservation

10

### **Wildlife and animal welfare**

---

The illegal trade in wildlife, such as elephants, rhinos, pangolins and precious timber types is taking place on an industrial scale. Wildlife crime continues to be a major problem worldwide, estimated to be worth up to USD 19 billion a year<sup>xv</sup>, ranking it alongside other serious trans-national crimes. Airlines and hub airports can play an important role in supporting conservation and preventing the transportation of illegal wildlife.



## Group-wide objectives

Our wildlife objective is to:

- Manage wildlife sensitively and invest in conservation projects

## Wildlife trends

To help us to meet our commitment to manage wildlife sensitively and support conservation, we are establishing systems to measure the quantity, type, origin and destination of legally transported endangered species passing through Qatar Airways' global network.



## Wildlife initiatives

Qatar Airways has a policy of zero tolerance towards the illegal transportation of endangered species. At Buckingham Palace, in the presence of HRH The Duke of Cambridge and The Rt. Hon. the Lord Hague of Richmond, Qatar Airways became an inaugural signatory to the United for Wildlife Transport Industry Declaration to help lead the air travel industry to eliminate illegally transported wildlife.

As the world's third largest international air cargo carrier, Qatar Airways Cargo adheres to industry best-practice for the welfare of live animals.

Qatar Airways Cargo provide a dedicated live animal centre at Hamad International Airport which spans over 4,200m<sup>2</sup> and provides accommodation and inspection of live animals, ranging from horses and camels to dogs, cats, fish and fowl. The facility includes veterinary inspections, a paddock for horses to exercise and specialist supervision before and after the flight.



## Low environmental impact materials

Material used in the construction of physical infrastructure and the operation of major catering and retail activities may be scarce or have the potential to be damaging to the environment or human health during their extraction, transportation, manufacture or use.

Design and procurement decisions present an opportunity to deliver environmental improvements as well as cost savings while maintaining quality and customer experience.

## Group-wide objectives

Our low environmental impact material objective is to:

- Create opportunities to use sustainably sourced and low environmental impact materials within our supply chain

### Low environmental impact materials initiatives

- Hamad International Airport's current and future facilities expansion programme

The long-term plan for Hamad International Airport involves the extension of its world-class terminal building. Material selection and specification will play an important role in the sustainable design of the new infrastructure.

Priority will be given towards:

- Reducing the use of raw materials including the responsibly sourced timber products
- Increasing the use of recycled materials and the recycled content in materials such as aggregates and steel
- Sourcing local, regional and low-carbon products and materials
- Adopting durable and erosion resistant materials
- Recycling construction waste

# 11 Environmental data table

Energy & Climate Change (TCO <sub>2</sub> Emissions) <sup>A</sup>	Qatar Airways Group		Qatar Airways		Qatar Executive		Qatar Aircraft Catering Company		Qatar Duty Free Company		Qatar Distribution Company		Qatar Aviation Services		Hamad International Airport (directly managed)	
	2014-2015	2015-2016	2014-2015	2015-2016	2014-2015	2015-2016	2014-2015	2015-2016	2014-2015	2015-2016	2014-2015	2015-2016	2014-2015	2015-2016	2014-2015	2015-2016
Total	12,446,564	14,974,227	12,220,713	14,713,308	16,073	15,917	17,695	19,766	2,931	2,665	1,633	1,607	37,334	42,556	150,186 <sup>B</sup>	178,408
Scope 1 (direct emissions)	12,139,530	14,607,835	12,094,992	14,557,895	16,073	15,917	5,236	6,098	113	164	14	11	21,948	26,507	1,154 <sup>B</sup>	1,243
Scope 2 (electricity <sup>C</sup> )	307,034	366,392	125,721 <sup>D</sup>	155,413 <sup>D</sup>	0	0	12,459	13,668	2,817	2,501	1,619	1,595	15,386	16,049	149,032	177,165
Aviation fuel	12,110,601	14,573,440	12,094,535 <sup>E</sup>	14,557,531 <sup>F</sup>	16,066 <sup>G</sup>	15,909 <sup>H</sup>										
Diesel	25,227	30,300	0	0	0	0	4,688	5,098	97 <sup>I</sup>	130 <sup>J</sup>	0	0	19,942 <sup>I</sup>	24,508 <sup>J</sup>	500 <sup>K</sup>	563
Petrol	3,641	3,450	456 <sup>L</sup>	364 <sup>M</sup>	7	8	487	354	16 <sup>I</sup>	34 <sup>J</sup>	14	11	2,006 <sup>I</sup>	1,999 <sup>J</sup>	654 <sup>K</sup>	680
Liquid Petroleum Gas	61	646	0	0	0	0	61 <sup>N</sup>	646 <sup>O</sup>	0	0	0	0	0	0	0	0
General Business Information																
Employees <sup>P</sup>	36,549	39,369	21,880	23,802	107	113	1,501	1,867	1,807	2,011	91	100	7,177	7,478	1,055	1,235
Passengers			22,352,000	26,654,000												
No. of passenger flights			146,561	165,228												
Cargo tonnes			764,324	954,191											1,208,138	1,534,553
Passenger destinations served															147	156
Number of aircraft	159	190	151	180 <sup>Q</sup>	8	10										
Aircraft movements <sup>R</sup>															193,332	222,868
Number of airlines															34	37
Hamad International Airport (airport campus)																
Hamad International Airport (airport campus)	Total CO <sub>2</sub> emissions (tonnes)		Scope 1 (direct emissions) (tonnes)		Scope 2 (electricity ) (tonnes)		Total waste (tonnes)		Total solid waste recycled (%)		Water consumption (m <sup>3</sup> )		Waste water effluent (m <sup>3</sup> )		Waste water re-used (%)	
	2014-2015	2015-2016	2014-2015	2015-2016	2014-2015	2015-2016	2014-2015	2015-2016	2014-2015	2015-2016	2014-2015	2015-2016	2014-2015	2015-2016	2014-2015	2015-2016
	281,753	307,778	28,459 <sup>S</sup>	34,020 <sup>S</sup>	253,294 <sup>T</sup>	273,758 <sup>T</sup>	27,567 <sup>U</sup>	45,796 <sup>U</sup>	11.2 <sup>V</sup>	23.7 <sup>V</sup>	3,497,892 <sup>W</sup>	4,789,058 <sup>W</sup>	612,599 <sup>X</sup>	1,796,763	89.9 <sup>Y</sup>	93.4 <sup>Y</sup>

---

## Footnotes:

- A. CO<sub>2</sub> emissions have been calculated following the methodology set out within the The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition) where the 'Control' approach has been used. The CO<sub>2</sub> conversion factors (a constant that varies according to energy type) are multiplied by the energy consumption (in litres, kilograms, or kilowatts) to arrive at the CO<sub>2</sub> emissions in kg, which is then divided by 1000 to arrive at the CO<sub>2</sub> emissions in tonnes. The CO<sub>2</sub> conversion factors for Jet A1 is 3.15 kg CO<sub>2</sub>/kg fuel; diesel is 2.68 kg CO<sub>2</sub>/litre; petrol is 2.27 kg CO<sub>2</sub>/litre; LPG is 1.61 kg CO<sub>2</sub>/litre; electricity is 0.49 kg CO<sub>2</sub>/KWh.
- B. Figure is a minor underestimation of 2.2 tonnes CO<sub>2</sub> as the scope 1 emergency generator diesel consumption for January to March 2015 was entered in the system only after the verification process was complete.
- C. Emissions produced by electricity consumption for each business unit within Qatar Airways Group relate to off-airport commercial buildings, residential buildings, and/or airport activities. Figures for QAS and QACC relate to airport activities only. Figures for QDF relate to airport activities and an off-airport boutique (the remaining off-airport figures are included in Qatar Airways figures). QDC figures relate to off-airport commercial buildings and a residential unit.
- D. Residential buildings at Barwa City and the Pearl, along with Qatar Cool chilling services, are excluded. The off-airport commercial sites and residential buildings are based on the bills received from the electricity provider which may over or under estimate electricity consumption.
- E. Emissions calculation is based on the fuel consumption from the block fuel and the APUs. The fuel consumed by the APUs is based on an estimation using annual APU utilisation hours for each aircraft type.
- F. Emissions calculation is based on the fuel consumption from the block fuel and the APUs. The fuel consumed by the APUs are based on the APU utilisation hours for the year. Figure includes emissions from two wet-leased aircraft which have been estimated using the Euro-control Small Emitters Tool.
- G. Figure calculated using the fuel uplift, converting into kg using a specific gravity default value of 0.8.
- H. Figure based on the fuel burn calculated using aircraft fuel monitoring system.
- I. QDF and QAS petrol and diesel figures (i.e. scope 1) includes emissions for vehicles only.
- J. QDF and QAS petrol and diesel figures (i.e. scope 1) includes emissions from vehicles, power generators, ground power units, and other ground equipment. QDF is based on an approximate monthly average while QAS figures are based on pro rata.
- K. Vehicle fuel consumption for April 2014 is based on pro-rata average as HIA did not open for operations until May 2014.
- L. Only 20 percent of the total Qatar Airways' vehicle fleet has been assessed for CO<sub>2</sub> emissions.
- M. CO<sub>2</sub> emissions are based on the vehicles that are currently monitored which do not reflect the total Qatar Airways fleet and may include owned and leased vehicles.
- N. Figure based on meter readings. Value represents the test phase of using LPG in catering boilers.
- O. Figure based on the procured quantities of LPG. Value represents commercial use of LPG after the successful testing phase.
- P. Breakdown of employee numbers is provided for Qatar Airways Group divisions included within the scope of this report.
- Q. The figure excludes two Boeing 747F aircraft which are wet leased and considered to be temporary.
- R. Accounts for aircraft landing and taking off.
- S. Figures include HIA managed emissions as well as scope 1 emissions from QAS, QDF, QACC, and QE (except aviation fuel) but excludes other tenant emissions. Figures are an estimation which may not take into account all vehicles that operate in or within the airport.
- T. Figures includes HIA managed emissions as well as scope 2 emissions from all airport tenants including non-Qatar Airways Group tenants.
- U. Waste includes non-hazardous waste, hazardous solid waste, hazardous liquid waste, and inert waste. The mass of waste has been calculated by using density values of the particular waste in question and using the volume of the waste containers that the waste is put into. Multiplying the density and the volume and dividing by 1000 gives the waste in tonnage. It is assumed that the waste occupies the entirety of the waste containers. Over 95 percent of the total waste is solid waste.
- V. Calculated by dividing the total recycled solid waste (in tonnes) by the total solid waste (in tonnes) and multiplying by 100.
- W. Meter readings are carried out at different times and sometimes not in the space of one month exactly. The reporting year readings may include approximately a week's worth of data from the previous or following year.
- X. Figures includes data from December 2014 to March 2015 only as the waste water treatment plant was not operational prior to these dates.
- Y. Percentage has been calculated based on the reporting year figures of 'Waste Water Influent' and the 'Treated Sewage Effluent'. The sum of the Treated Sewage Effluent for the reporting year has been divided by the sum of the Waste Water Influent for the reporting year. This is then multiplied by 100 to get a percentage value of the influent that is re-used.
- Z. Including aircraft on order plus options



---

## References:

- i. Qatar National Vision, General Secretariat for Development Planning, State of Qatar: <http://www.mdps.gov.qa/en/qnvl/Pages/default.aspx>
- ii. Airport Carbon Accreditation Scheme: <http://www.airportcarbonaccreditation.org/>
- iii. IATA Environmental Assessment (IEnvA) programme: <http://www.iata.org/whatwedo/environment/Pages/environmental-assessment.aspx>
- iv. United for Wildlife, The Buckingham Palace Declaration, 15 March 2016: <http://www.unitedforwildlife.org/#!/2016/03/the-buckingham-palace-declaration>
- v. IATA Environment Committee: <http://www.iata.org/whatwedo/workgroups/Pages/env.aspx>
- vi. Arab Air Carrier Organisation Environmental Policy Group: <http://aaco.org/home>
- vii. Sustainable Aviation Fuel Users Group: <http://www.safug.org/>
- viii. IATA, Environmental Policy, Climate Change Targets: <http://www.iata.org/policy/environment/Pages/climate-change.aspx>
- ix. IATA Technology Roadmap, 2013: <http://www.iata.org/publications/Pages/technology-roadmap.aspx>
- x. ICAO, Environmental Protection, Market-Based Measures: <http://www.icao.int/environmental-protection/Pages/market-based-measures.aspx>
- xi. Airbus, Innovation, Winglets: <http://www.airbus.com/innovation/proven-concepts/in-design/winglets/>
- xii. Hukoomi, Environment and Natural Resources, Water and Desalination: <http://portal.www.gov.qa/wps/portal/topics/Environment+and+Natural+Resources/Water+and+Desalination>
- xiii. ICAO, Environmental Protection, Aircraft Noise: <http://www.icao.int/environmental-protection/Pages/noise.aspx>
- xiv. ICAO, Environmental Protection, Local Air Quality: <http://www.icao.int/environmental-protection/Pages/local-air-quality.aspx>
- xv. IATA, Environmental Policy, Combatting Illegal Trade in Wildlife <http://www.iata.org/policy/environment/pages/wildlife-trafficking.aspx>

## Assurance statement:

### Context

We have been engaged by Qatar Airways Group to perform an independent verification with reasonable assurance of the scope 1 and 2 carbon inventory data of the following business entities for the period 1st April 2015 – 31st March 2016 and presented in Qatar Airways Group's Carbon Footprint report. This includes the following subsidiary businesses:

- Qatar Airways (QR)
- Qatar Executive (QE)
- Qatar Aviation Services (QAS)
- Qatar Duty Free (QDF)
- Qatar Aircraft Catering Company (QACC)
- Qatar Distribution Company (QDC)
- Hamad International Airport Qatar (HIA)

All other information in Qatar Airways Group's Carbon Footprint report is not subject to our assurance engagement and we do not report and do not opine on this information.

The Environmental Affairs department of Qatar Airways Group is responsible for the preparation and presentation of the Qatar Airways Group's Carbon Footprint report, including the reported annual environmental data and information presented therein. We are responsible for providing an Assurance Statement on the reported annual environmental data presented in the Report. Verifavia S.A.R.L. and Verifavia (UK) Ltd. disclaim any liability or responsibility to a third party for decisions, whether investment or otherwise, based on this Assurance Statement.

### Criteria

The criteria used by Qatar Airways Group to report the carbon inventory data is the Greenhouse Gas Protocol – "A Corporate Accounting and Reporting Standard" (Revised Edition).

For Hamad International Airport the carbon inventory data is also based on the requirements of the Airport Carbon Accreditation programme (Airport Carbon Accreditation Guidance Document Issue 9 v2 August 2015).

We conducted the independent audit based on the following verification criteria:

- ISO14065:2013 – Greenhouse gases – requirements for greenhouse gas validation and verification bodies for use in accreditation or other forms of recognition
- ISO14064-3:2012 – Greenhouse Gases – Specification with guidance for the validation and verification of greenhouse gas emissions and removals
- Chapter 10 of the Greenhouse Gas Protocol – "A Corporate Accounting and Reporting Standard" (Revised Edition)
- Section 10 of the Airport Carbon Accreditation Guidance Document Issue 9 v2 August 2015

### Responsibilities

Qatar Airways Group is solely responsible for the preparation and reporting of their carbon inventory data, for any information and assessments that support the reported data, for determining the group's objectives in relation to carbon information and management, and for establishing and maintaining appropriate performance management and internal control systems from which reported information is derived.

In accordance with the verification contract, it is the responsibility of Verifavia to form an independent opinion, based on the

examination of information and data presented in the Carbon Footprint report, and to report that opinion to Qatar Airways Group. We also report if, in our opinion:

- the carbon inventory data is or may be associated with misstatements (omissions, misrepresentations or errors) or non-conformities; or
- the verification team/verifier has not received all the information and explanations that it requires to conduct its examination; or
- improvements can be made to the operator's performance in monitoring and reporting of carbon inventory data.

We conducted our examination having regard to the verification criteria documents listed above. This involved a site visit to inspect the facilities and interview the staff responsible. It also included examining, on a test basis, evidence to give us reasonable assurance that the amounts and disclosures relating to the data have been properly prepared in accordance with the requirements of the Greenhouse Gas Protocol in terms of relevance, completeness, consistency, transparency and accuracy. This also involved assessing where necessary estimates and judgements made by Qatar Airways Group in preparing the data and considering the overall adequacy of the presentation of the data in the Carbon Footprint report.

### Independence statement

We confirm that Verifavia and the verification team are independent of Qatar Airways Group and have not assisted in any way with the development of the carbon inventory or in the preparation of any text or data provided in the Carbon Footprint report, with the exception of this Assurance Statement.

### Opinion

We conducted a verification of the carbon inventory data reported by Qatar Airways Group in its Carbon Footprint report and presented above. On the basis of the verification work undertaken to reasonable assurance, these data are fairly stated and contain no material misstatements or material non-conformities.

### Recommendations

Verifavia recommends that, in future carbon inventories, Qatar Airways Group:

- extend the organizational boundaries of the inventory to subsidiary companies and joint ventures over which it has operational and / or financial control, and to non-aviation fuel emission sources located outside of the State of Qatar;
- extend the inventory to other emissions sources of greenhouse gases considered by the Greenhouse Gas Protocol and listed in the Kyoto Protocol (methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF<sub>6</sub>));
- design data gap approaches in order to estimate emissions in the case of missing energy consumption data;
- design and implement a quality control system on the reported carbon inventory data; and,
- develop a complete set of carbon inventory data accounting procedures.



Paris & London, 11 August 2016  
Julien Dufour, CEO, VERIFAVIA SARL & VERIFAVIA (UK) LTD







### **Qatar Airways (Q.C.S.C.)**

Qatar Airways Tower

Airport Road

P.O. Box 22550

Doha, Qatar

October 2016

