

ROADMAP TO NET ZERO BY 2030

# WHERE WILL YOU BE?

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01

# WHERE WILL YOU BE?

Climate change is undoubtedly one of the most pressing issues of our time. The aviation sector contributes between 2-3% of global Greenhouse Gas (GHG) emissions and has a pivotal role to play in contributing to the UK Government's target for Net Zero by 2050.



# We want to set the standards for environmental performance within our sector.

As Europe's premier business aviation airport and the home of British aviation, Farnborough Airport has always sought to take a lead role in managing its environmental impact. In 2018, we became the first business aviation airport in the world to achieve carbon neutral status.

It is without question that our future, and that of the wider aviation industry, requires new concerted and coordinated efforts to remove, reduce and mitigate emissions over time. With our Roadmap, we are setting ourselves ambitious targets.

By 2030 or sooner we are committing to achieve Net Zero for all the emissions within our direct or indirect control.

We want to set the standards for environmental performance within our sector. We want to build upon our historic and pioneering legacy. By 2030 or sooner we want to be a global showcase for airport sustainability.

Where will you be?



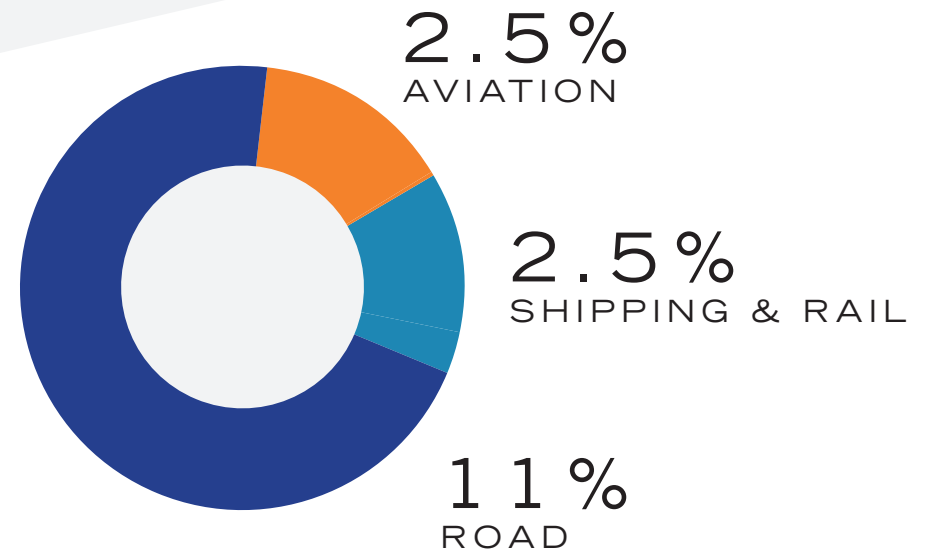
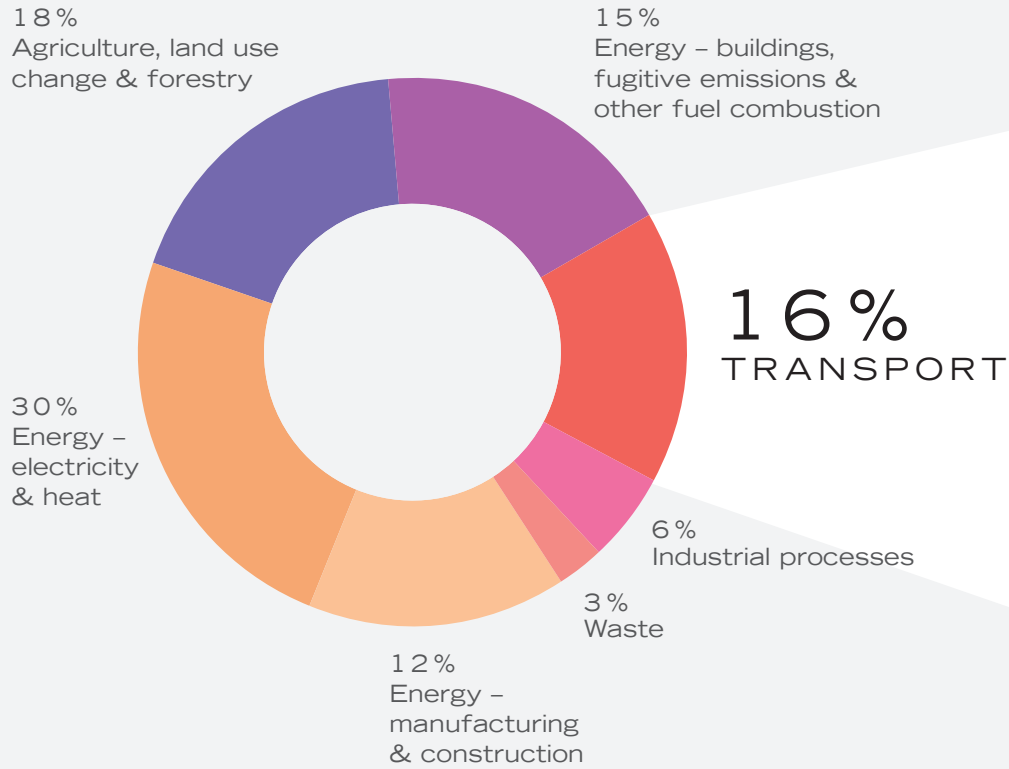
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# OUR CARBON FOOTPRINT

The aviation sector has an important role to play in reducing GHG emissions. Like any other sector or industry, the environmental impact of business aviation needs to be proactively managed to support the wider economic benefits it generates.



# EMISSIONS BY SECTOR



*Approximate percentages sourced from the World Resources Institute and Climate Watch (based on raw data from the International Data Agency).*



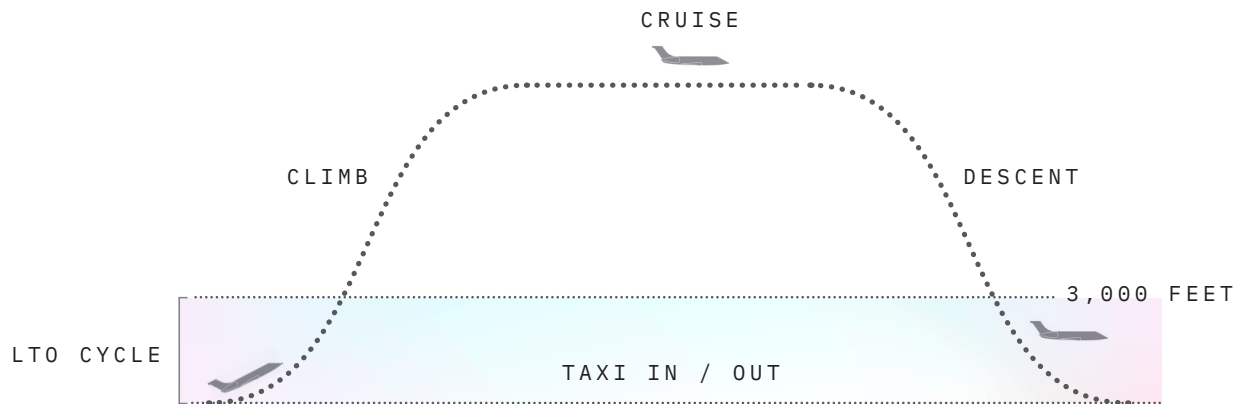
# EMISSIONS BY SCOPE

The Greenhouse Gas (GHG) Protocol Corporate Standard classifies a company’s emissions into Scopes 1, 2 & 3. For the purposes of this Roadmap to Net Zero, emissions for the three operating entities of Farnborough Airport, the Aviator Hampshire hotel and the Swan public house are included. All three operating companies are subsidiaries of the Farnborough Airport Company Limited, hereafter referred to as “Farnborough Airport”. The table below shows how we apply the Protocol Standard to the emissions of Farnborough Airport. Our emissions are calculated in tonnes of carbon dioxide equivalent (tCO<sub>2</sub>e).

SCOPE	DEGREE OF CONTROL	DESCRIPTION
Scope 1	Direct Control	Direct emissions generated by Farnborough Airport
Scope 2	Indirect Control	Indirect emissions generated through the purchase of energy consumed by Farnborough Airport
Scope 3a (Airport Operations)	Some Influence	Emissions excluding Landing & Take Off (LTO) of aircraft up to 3,000 ft, passenger surface access (passenger journeys to and from the airport) and Climb, Cruise & Descent (CCD) of aircraft above 3,000 ft
Scope 3b	Reduced Influence	Scope 3a including LTO of aircraft up to 3,000 ft and passenger surface access
Scope 3c	Limited Influence	Scope 3b including emissions from CCD of aircraft above 3,000 ft



# CONTROLLABLE EMISSIONS



Depending on Scope, an airport has a degree of control and influence over the emissions that are generated. Increasingly, airports are estimating those emissions belonging to airlines and operators, often referred to as Climb, Cruise & Descent (CCD) emissions above 3,000 ft. These can be over 10 times the magnitude of an airport's Scopes 1, 2 & 3b emissions combined.

Since 2018, Farnborough Airport has been certified as carbon neutral for its Scopes 1 & 2 emissions by the Airport Carbon Accreditation (ACA) scheme, which is managed by Airports Council International (ACI) Europe. This is Level 3+ of the ACA scheme, which defines those emissions within an airport's control and influence as Scopes 1, 2 & 3b. This is the definition we shall use to manage our Scope 3 emissions performance going forward.





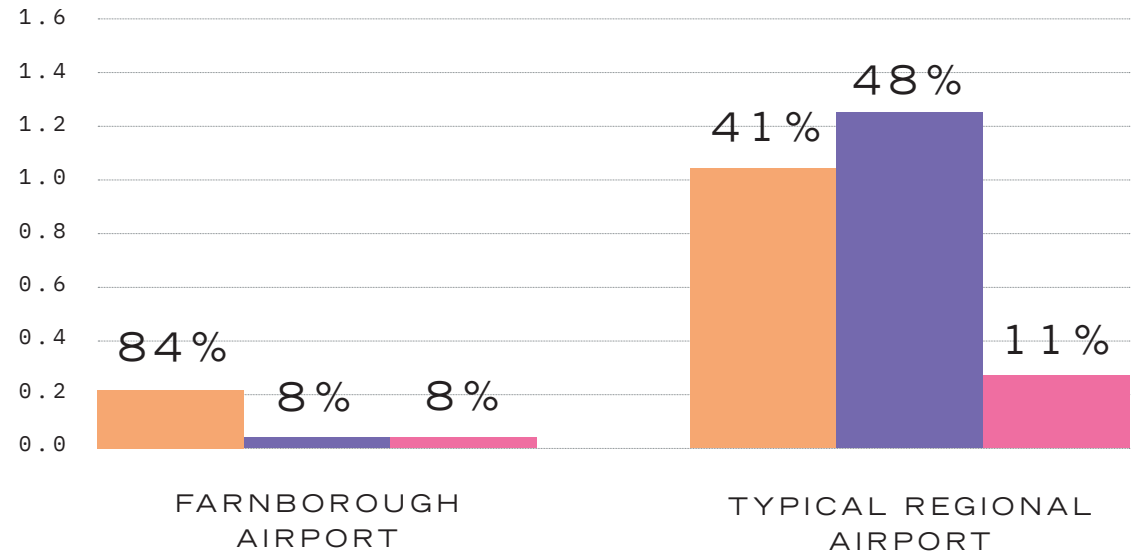
# Farnborough Airport's total emissions per Air Traffic Movement (ATM) are less than 13% of a typical regional airport.

The ability for an airport to control or influence its emissions in the future is an important attribute. Scope 3b emissions can at best only be partially influenced by an airport, and so the lower proportion of emissions that fall into this classification the more control and influence an airport has. In this regard, Farnborough Airport's Scope 3b emissions are approximately five times that of its Scope 1 & 2 emissions. This compares favourably to commercial passenger airports where this metric is significantly greater.

One of the reasons for this is because commercial passenger airports are many times more carbon generating on an Air Traffic Movement (ATM) basis due to higher passenger loads and larger aircraft types. This contributes to the additional emissions generated during the Landing & Take Off (LTO) cycle, which fall into the Scope 3b classification. At Farnborough Airport, total emissions per ATM are 12.8% of a typical regional airport.

Further, higher passenger loads contribute significantly to surface access emissions, which have a material impact on air quality in the local area, especially at peak times. Emissions generated by passengers travelling to and from a commercial passenger airport can contribute close to 50% of its total Scope 3b emissions.

Scope 3b emissions measured in tCO<sub>2</sub>e per ATM split by source



- Scope 3b aviation
- Scope 3b surface access
- Scope 3b other

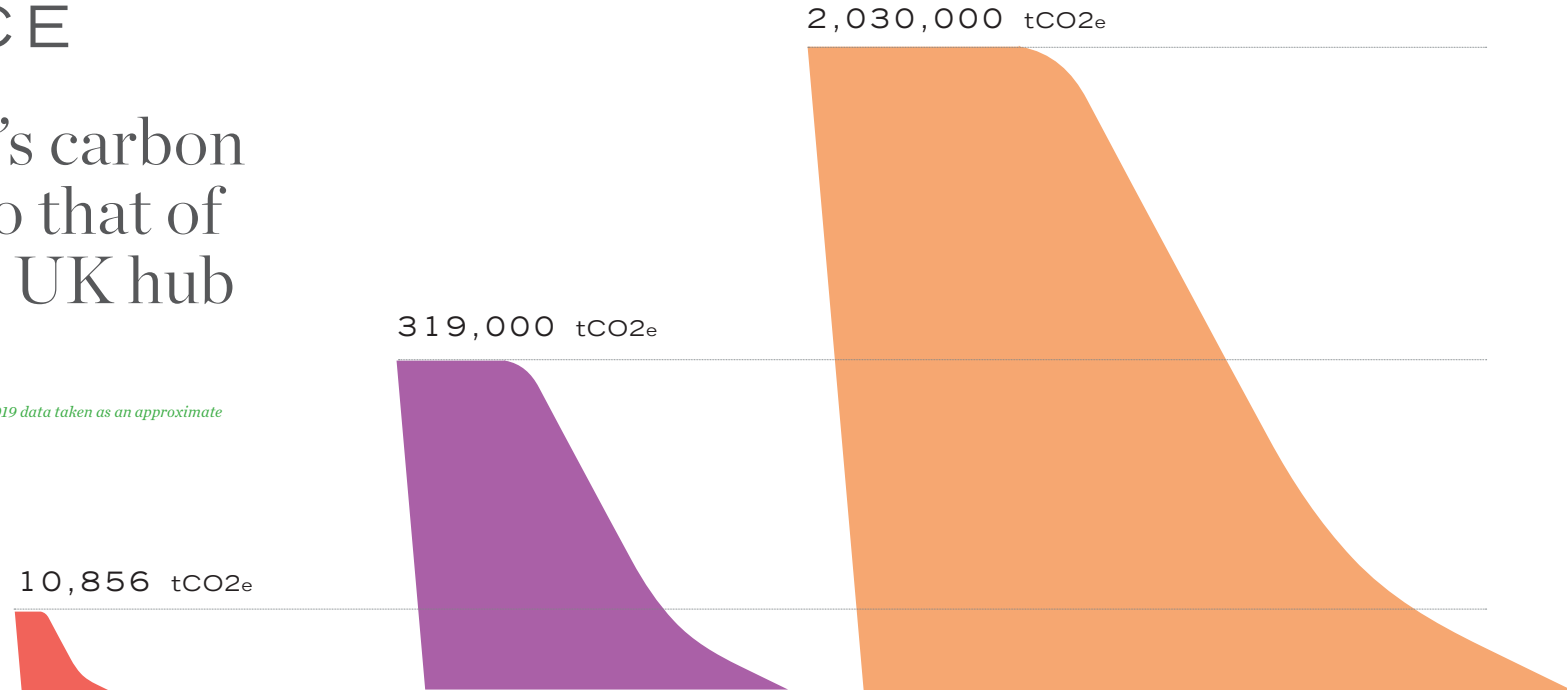
*Farnborough Airport data taken from Ricardo Energy & Environment's 2019 carbon footprint. Regional airport data taken as an average of selected UK regional airports.*



# RELATIVE EMISSIONS PERFORMANCE

Farnborough Airport's carbon footprint compared to that of a typical regional and UK hub airport.

*Hub 2019 data taken as an approximate from a UK airport website. Regional airport 2019 data taken as an approximate average of selected UK airports.*



All measurements are in tCO <sub>2e</sub> . Except ATMs	FARNBOROUGH	REGIONAL	HUB
Scopes 1 & 2	1,846	9,000	30,000
Scope 3b	9,010	310,000	2,000,000
<b>Total Scopes 1,2 &amp; 3b</b>	<b>10,856</b>	<b>319,000</b>	<b>2,030,000</b>
ATM numbers	32,366	120,000	475,000
tCO <sub>2e</sub> per ATM	0.34	2.66	4.27
Scope 3c	119,000	2,180,000	20,000,000



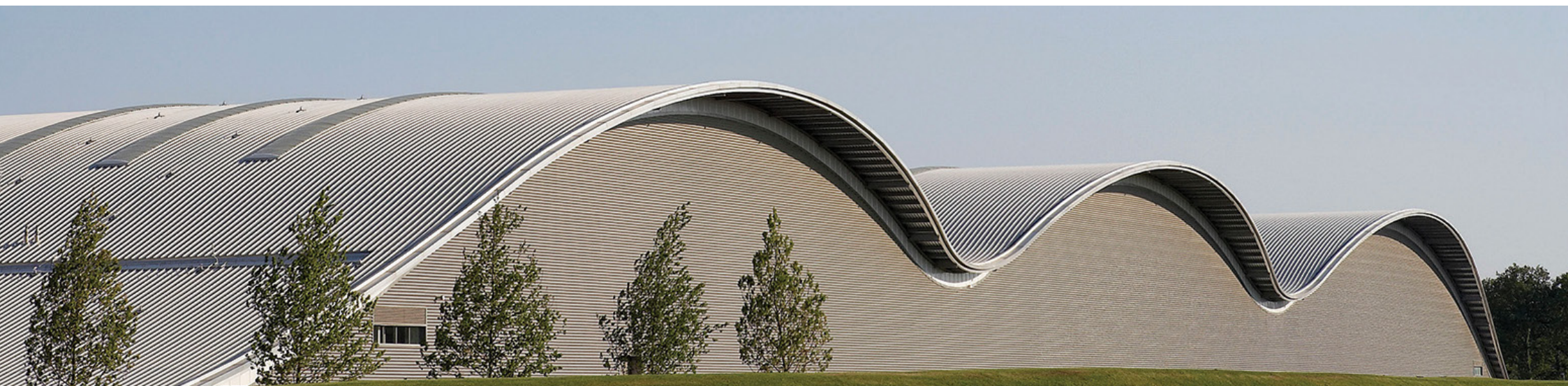
# Farnborough Airport's carbon footprint is smaller than that of a typical regional or UK hub airport, not only on an absolute level but also on an emissions per ATM basis.

*Hub 2019 data taken as an approximate from a UK airport website. Regional airport 2019 data taken as an approximate average of selected UK airports.*

In 2019, Farnborough Airport's emissions across Scopes 1, 2 & 3b were 10,856 tonnes of carbon dioxide equivalent (tCO<sub>2</sub>e). This compares with a typical UK regional airport of 319,000 tCO<sub>2</sub>e or a typical UK hub airport of 2,030,000 tCO<sub>2</sub>e.

On a relative basis, Farnborough Airport's carbon footprint is smaller than that of a typical regional or UK hub airport, not only on an absolute level but also on an emissions per ATM basis. This is because the airport is subject to restrictions on the type and mix of aircraft movements that can be handled.

This limits the size, weight and passenger load capabilities of aircraft, which in turn has a benefit from an absolute carbon emissions perspective. Farnborough Airport's carbon footprint would be as much as eight times greater than it is today if there were no limitations on aircraft size and instead had the same carbon emissions profile per ATM of a typical regional airport.





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# WHAT IS NET ZERO?

Net Zero was established as part of a global concept by the Intergovernmental Panel on Climate Change (IPCC), which has recommended limiting global heating to 1.5 degrees Celsius to avoid the impacts of climate change.



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In 2021, the UK Government published its Net Zero Strategy for decarbonising the UK economy by 2050.

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#### CARBON NEUTRALITY

This requires reducing emissions as much as possible and then compensating what remains by offsetting – e.g. by investing in emissions reductions elsewhere (in other organisations/sectors) through the purchase of carbon credits.



#### NET ZERO

Net Zero refers to the reduction of carbon emissions to as close to zero as possible. However, it does allow for removal of any residual emissions from the atmosphere e.g. relying on natural processes (carbon sinks such as forests) or dedicated technologies (carbon capture & storage).



#### ABSOLUTE ZERO

When no emissions are attributable to an organisation across all relevant scopes.

*Definitions above sourced from ACI Europe and the United Nations.*



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# MEASURING PERFORMANCE

Every year, Farnborough Airport undertakes an assessment of its Carbon Footprint through its participation in the ACA Scheme managed by ACI Europe. From this, a detailed calculation of our emissions by source is produced and verified externally. This helps us identify opportunities to reduce and mitigate emissions across our business and enables us to prioritise actions and investments over the longer term.



# OUR EMISSION SOURCES

## SCOPE 1



### BUILDINGS & AIRFIELD

Includes emissions associated with the energy consumption of onsite buildings, fire training, standby generators and the lighting for the airfield.



### OPERATIONAL VEHICLES

Vehicles involved in the operation of the airport.



### DE-ICING

Aircraft and surface de-icer and antifreeze usage.

## SCOPE 2



### ELECTRICITY

Emissions from electricity, steam or heat which we purchase and use.

## SCOPE 3B



### AVIATION

Landing and take-off (LTO) cycle emissions are defined as movements below 3,000 ft in altitude.



### SURFACE ACCESS

These are emissions from the journeys passengers take to and from an airport.



### WASTE

This includes the combined waste from the airport, its tenants and airline operators.



### BUSINESS TRAVEL

This includes all employee travel for business purposes.

Summary of the sources of Farnborough Airport's Scopes 1, 2 & 3b emissions.



As well as total tCO<sub>2</sub>e, which measures our absolute carbon emissions impact, we also use the concept of tCO<sub>2</sub>e per MTOW kilotonne flown, where MTOW is the published Maximum Take-Off Weight of a particular aircraft.

We consider this metric to be the most relevant metric for managing our performance. Using tCO<sub>2</sub>e per MTOW kilotonne flown, more accurately reflects changes in aircraft and fuel technology over time. This also reflects enhancements resulting from airspace optimisation and efficiency initiatives in airfield ground operations.

A metric such as tCO<sub>2</sub>e per passenger can easily distort the true carbon impact of a flight, especially where larger flights with more passengers generate more total carbon despite having a lower tCO<sub>2</sub>e per passenger.

	2015	2016	2017	2018	2019	2020	2021
<i>The figures in the table opposite show our annual tCO<sub>2</sub>e per MTOW kilotonne flown since 2015.</i>							
ATM Total	25,087	25,149	27,005	30,371	32,366	19,952	26,007
MTOW in kilotonnes	496.8	520.1	531.5	602.4	638.8	392.6	522.1
tCO <sub>2</sub> e	9,684	10,187	9,813	8,829	10,856	6,788	7,442
tCO <sub>2</sub> e per kilotonne flown	19.49	19.58	18.46	14.65	16.99	17.28	14.25





# OUR JOURNEY SO FAR...

2015

COMMITTED  
TO IMPROVE  
ENVIRONMENTAL  
PERFORMANCE

Certified to the internationally recognised ISO 14001 standard for our commitment to environmental management.

2018

COMMITTED TO  
100% RENEWABLE  
ELECTRICITY

Supplied through the UK energy regulator's Renewable Energy Guarantees of Origin scheme (REGO).

2021

SUSTAINABLE  
FUEL PROVIDER

Began offering all aircraft Sustainable Aviation Fuel (SAF), which can reduce lifecycle carbon emissions by up to 80%.

2021

GOING ELECTRIC

Investment in the airport's first electric ground power unit, which was the start of a wider transition to replace all diesel ground power units.

2018

BECAME WORLD'S  
FIRST BUSINESS  
AVIATION AIRPORT TO  
BE CARBON NEUTRAL

Certified as level 3+ neutral by the Airport Carbon Accreditation (ACA) scheme.

2019

AWARD-WINNING  
SUSTAINABILITY

Winner of the Energy and Carbon Transition category at the Institute of Environmental Management and Assessment (IEMA) Sustainability Impact Awards, recognising achievements in energy efficiency and carbon management.

2022

RENEWABLE FUEL  
FOR ONSITE  
VEHICLES

The majority of diesel vehicles powered by Hydrotreated Vegetable Oil (HVO), reducing emissions by up to 90%.



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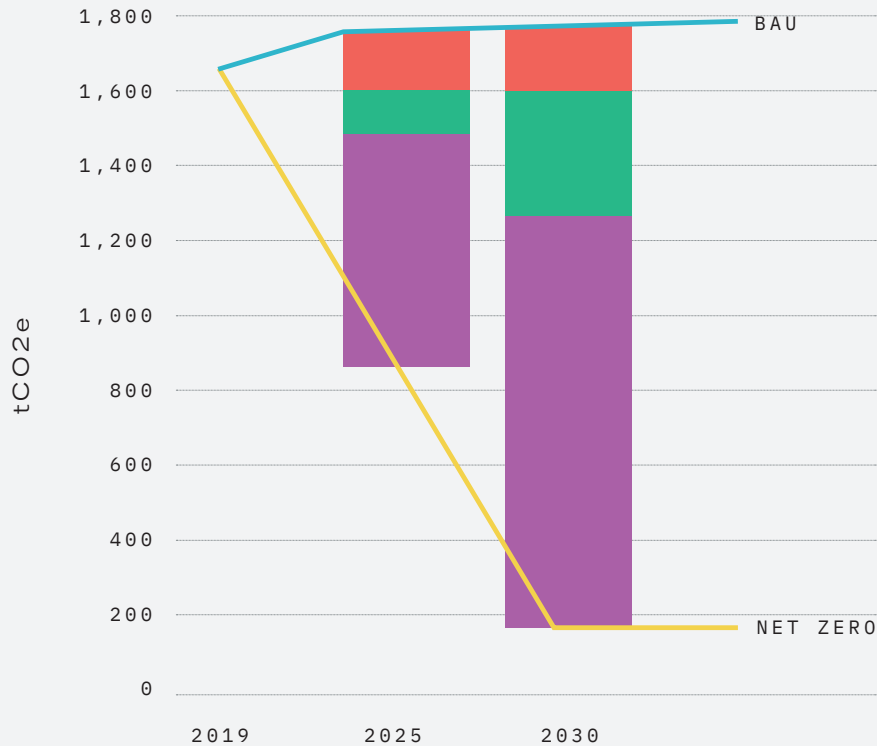
# OUR PATHWAY TO NET ZERO

With our Roadmap to Net Zero, we are committing to achieve Net Zero for all emissions within our direct or indirect control by 2030 or sooner.



# By 2030 or sooner our Scopes 1 & 2 emissions will reduce by 91%.

Emissions reduction pathway for Scopes 1 & 2 versus business as usual (BAU)

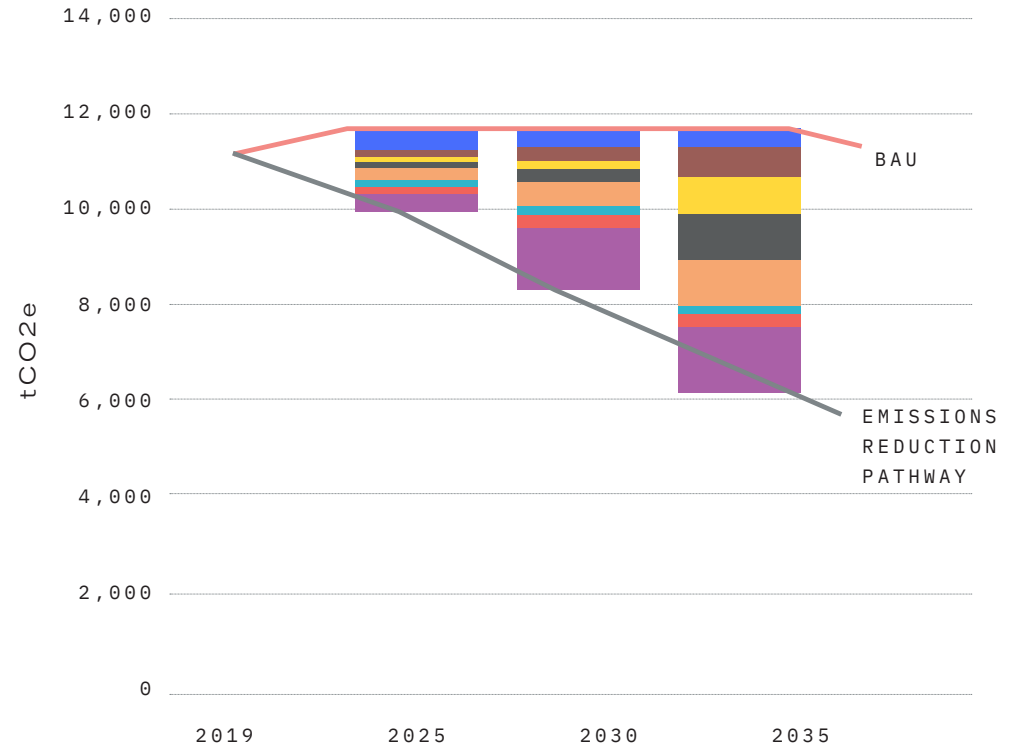


- Buildings
- Operational Vehicles
- Other

*Both graphs refer to Farnborough Airport only and data is taken from Ricardo Energy & Environment's 2019 carbon footprint.*

# By 2035 or sooner we shall target a reduction of our Scopes 1, 2 & 3b emissions by over 40%.

Emissions reduction pathway for Scopes 1, 2 & 3b versus BAU



- Buildings
- Operational vehicles
- Other
- PV
- SAF
- Zero emissions aircraft
- Transport
- Waste
- Ground movements



# OUR NET ZERO PATHWAY (SCOPES 1 & 2)



## BUILDINGS & AIRFIELD



## OPERATIONAL VEHICLES



## DE-ICING



## ELECTRICITY

Scope

Scope 1

Scope 1

Scopes 1 & 3b

Scope 2

What it covers

*Energy consumption for the terminal, hangars, control tower and airfield.*

*Includes fuel tanks and trucks.*

*Glycol and water solution used to remove frozen deposits on aircraft and runway.*

*Procurement of electricity.*

How we will reduce emissions and when

Target a 25% saving of energy through the rollout of energy efficiency improvements.

This includes controls, energy management, heating, ventilation and air conditioning (HVAC) and lighting upgrades.

Begin feasibility studies in 2022 and roll out energy efficiency programme by end of 2026.

Decarbonise the heating systems.

Begin feasibility studies in 2024 with the goal of having replaced the heating systems by 2030.

Reduce emissions from generators, the majority of which are for airfield lighting. Begin investigating the replacement options to be installed by or before 2030.

Continue with our vehicle decarbonisation programme in 2023 to further identify opportunities for low carbon alternatives.

The goal is for these vehicles to be replaced by 2030.

The onsite diesel-powered cars are already being changed to use Hydrotreated Vegetable Oil (HVO).

Engage with antifreeze suppliers to determine suitable environmentally friendly de-icing products by the end of 2022 that can reduce runway de-icing emissions by up to 60% and aircraft emissions by 30%.

Continue to purchase REGO backed electricity.



# OUR NET ZERO PATHWAY (SCOPE 3B)



## AVIATION



## SURFACE ACCESS



## WASTE



## BUSINESS TRAVEL

Scope

Scope 3b

Scope 3b

Scopes 3b

Scope 3b

### What it covers

*Aircraft Landing & Take Off Cycle (LTO) up to 3,000ft and Auxiliary Power Units.*

*How passengers and staff commute to and from the airport.*

*This includes the waste of tenants, including aircraft.*

*This includes all employee travel for business purposes.*

### How we will reduce emissions and when

Continue to drive usage of SAF.

Develop a plan to engage with industry bodies, airlines, aircraft, and manufacturers by the end of 2022 to increase SAF production and usage.

Engage with operators and enhance optimum LTO procedures where possible.

Review airspace efficiencies.

New staff incentive scheme to lease electric vehicles has been rolled out.

Farnborough Airport has 22 onsite charging points for electric vehicles and is planning to increase this to meet growing passenger and staff demand.

Set up waste management engagement forums with key stakeholders by the end of 2022.

Identify opportunities for increased usage of recycled materials.

Agree waste reduction targets with key milestones of 2025, 2030 & 2035.

Begin developing a business travel policy in 2022 to ensure emissions are minimised. Include uptake and development of measures and roll out policy in 2023.



# OUR TIMELINE

	2022	2023	2024	2025	2026	2027	2028	2029	2030	
SCOPE 1	<p>Begin feasibility studies to develop and roll out an energy efficiency programme for buildings and the airfield.</p> <p>Engage with antifreeze suppliers to determine suitable environmentally friendly de-icing products.</p>	<p>Begin feasibility study on whether solar PV could provide further decarbonisation.</p> <p>Continue developing vehicle decarbonisation programme to further identify opportunities for low carbon alternatives.</p>	<p>Begin feasibility studies to decarbonise the heating systems.</p> <p>Set targets for energy savings.</p> <p>Set targets to reduce runway and aircraft de-icing emissions.</p>	<p>Roll out energy efficiency programme.</p>	<p>Installation of solar PV complete.</p>	<p>Begin replacing heating systems.</p>				<p>Heating systems replaced.</p> <p>Onsite vehicles decarbonised.</p>
SCOPE 2	<p>Continue to purchase REGO backed electricity.</p>	<p>Continue to purchase REGO backed electricity.</p>	<p>Continue to purchase REGO backed electricity.</p>	<p>Continue to purchase REGO backed electricity.</p>	<p>Continue to purchase REGO backed electricity.</p>	<p>Continue to purchase REGO backed electricity.</p>	<p>Continue to purchase REGO backed electricity.</p>	<p>Continue to purchase REGO backed electricity.</p>	<p>Continue to purchase REGO backed electricity.</p>	
SCOPE 3B	<p>Develop a plan to engage with the aviation industry to increase SAF production and usage.</p> <p>Set up waste management engagement forums with key stakeholders.</p>	<p>Begin further optimising ground-based aircraft movements to minimise taxi and idling time.</p> <p>Agree waste reduction targets with key milestones of 2025, 2030 &amp; 2035.</p> <p>Roll out plan to engage with the aviation industry to increase availability and demand for SAF.</p>	<p>Further assess onsite electrical car charging infrastructure needs.</p> <p>Develop business travel policy to ensure emissions are minimised.</p>	<p>Identify opportunities for increased usage of recycled materials.</p> <p>Assess 2025 waste reduction target.</p> <p>Roll out business travel policy to ensure emissions are minimised.</p>	<p>Develop carbon offsetting strategy to tackle residual Scope 3b emissions.</p>		<p>Roll out carbon offsetting strategy to tackle residual Scope 3b emissions.</p>		<p>Assess 2030 waste reduction target.</p> <p>Agree further 2035 waste reduction target.</p>	




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# SUPPORTING CHANGE

As the birthplace of British aviation and having been the first business aviation airport in the world to achieve carbon neutrality in 2018, we want to continue to be at the forefront of innovation and sustainability best practice.





We want to be a global showcase for airport sustainability, we want our customers to choose us for this reason.

Farnborough Airport and the business aviation sector have a unique and important role to play in supporting and accelerating decarbonisation across the wider aviation industry.

In particular, there is an immediate opportunity for business aviation to become the commercial catalyst for unlocking investment in high-volume Sustainable Aviation Fuel (SAF) production and supply across the UK.

The cost of SAF continues to be a major hurdle to its wholesale adoption across the aviation industry. Through active promotion and investment in the use of SAF at Farnborough Airport, we want to be a future enabler for change. Alongside supporting further advancements in new fuel technologies, coupled with encouraging research and development in small to mid-size jet aircraft design, the business aviation sector will undoubtedly be an important proving-ground for future carbon reducing innovation.

We are on a journey to be Net Zero by 2030. Where will you be?





# GLOSSARY

ACA	Airport Carbon Accreditation Scheme
ACI	Airports Council International Europe
ATM	Air Traffic Movement - a landing or take-off of an aircraft
BAU	Business as Usual
CCD	Climb, Cruise & Descent emissions of an aircraft above 3,000 ft
GHG	Greenhouse Gas
IPCC	Intergovernmental Panel on Climate Change, which was created to provide policymakers with regular scientific assessments on climate change, its implications and potential future risks
LTO	Landing and take-off cycle – this term describes the four modes of aircraft operations in the vicinity of, or at, the airport. It includes: approach, taxiing, take-off and climb (usually up to 3,000 ft)
MTOW	Maximum Take-Off Weight of a particular aircraft
REGO	UK energy regulator’s Renewable Energy Guarantees of Origin scheme
SAF	Sustainable Aviation Fuel
tCO <sub>2</sub> e	Tonnes of carbon dioxide equivalent
tCO <sub>2</sub> e per ATM	Tonnes of carbon dioxide equivalent per Air Traffic Movement

