

# Travel report

Nov 2017-Oct 2018

Stockholm Business Region

Issued by

**TRICORONA**  
CLIMATE PARTNER

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In collaboration with

**HRG**

# Climate Impact Report

## Stockholm Business Region's Air Travel Nov 2017-Oct 2018

### Introduction

Tricorona has calculated the climate impact from Stockholm Business Region's air travel during Nov 2017-Oct 2018, based on data supplied by HRG.

Each flight has been calculated separately, using great circle distances between the specific airports, to take full account of take-off and landing cycles.

The calculations are based on NTM's calculation method and take account of all climate impact from the flight, including non-carbon emissions. To achieve this result, the carbon emissions at high altitude are multiplied by a factor of 2.7 to achieve a total figure expressed in terms of carbon dioxide equivalent (CO<sub>2</sub>e).

For full methodology please visit <https://www.tricorona.se/klimatkompensation/berakningsmetod/>

### Summary Results

The total emissions from Stockholm Business Region's flights during Nov 2017-Oct 2018 are shown below. Distances are reported in passenger-kilometres (pkm), which is the total transported distance for all individuals. For carbon offsets the total emissions are rounded up to nearest whole number, giving 225 tons of carbon dioxide equivalents.

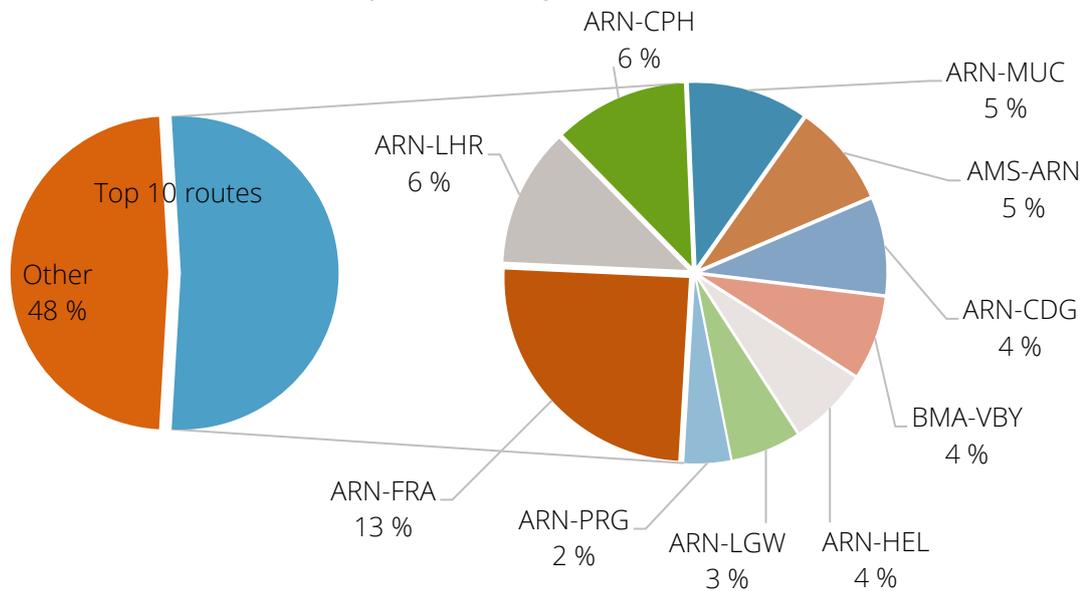
Category	Value	Unit
Total emissions	224,1	tonne CO <sub>2</sub> e
Emissions/flight	465	kg CO <sub>2</sub> e/flight
Emission/pkm	0,28	kg CO <sub>2</sub> e/pkm
No. Flights	482	-
Total distance	812 524	pkm

# Most commonly flown routes

Table: Top 10 routes by no. flights

Route	No. flights	% of all flights	Emissions/flight (kg)	Total emissions (kg)	% of all emissions	Total distance (pkm)	% of all distance	Emissions /pkm (kg/pkm)
ARN-FRA	62	13 %	338	20 975	9 %	75 953	9 %	0,28
ARN-LHR	30	6 %	399	11 964	5 %	43 886	5 %	0,27
ARN-CPH	29	6 %	167	4 829	2 %	15 936	2 %	0,30
ARN-MUC	26	5 %	369	9 588	4 %	34 966	4 %	0,27
AMS-ARN	22	5 %	320	7 041	3 %	25 372	3 %	0,28
ARN-CDG	21	4 %	469	9 856	4 %	32 371	4 %	0,30
BMA-VBY	18	4 %	75	1 353	1 %	3 428	0 %	0,39
ARN-HEL	17	4 %	128	2 175	1 %	6 766	1 %	0,32
ARN-LGW	15	3 %	402	6 035	3 %	22 152	3 %	0,27
ARN-PRG	10	2 %	303	3 032	1 %	10 871	1 %	0,28
Other	232	48 %	634	147 201	66 %	540 821	67 %	0,27
<b>Total</b>	<b>482</b>	<b>100 %</b>	<b>465</b>	<b>224 050</b>	<b>100 %</b>	<b>812 524</b>	<b>100 %</b>	<b>0,28</b>

Share of total trips, sorted by most often flown routes

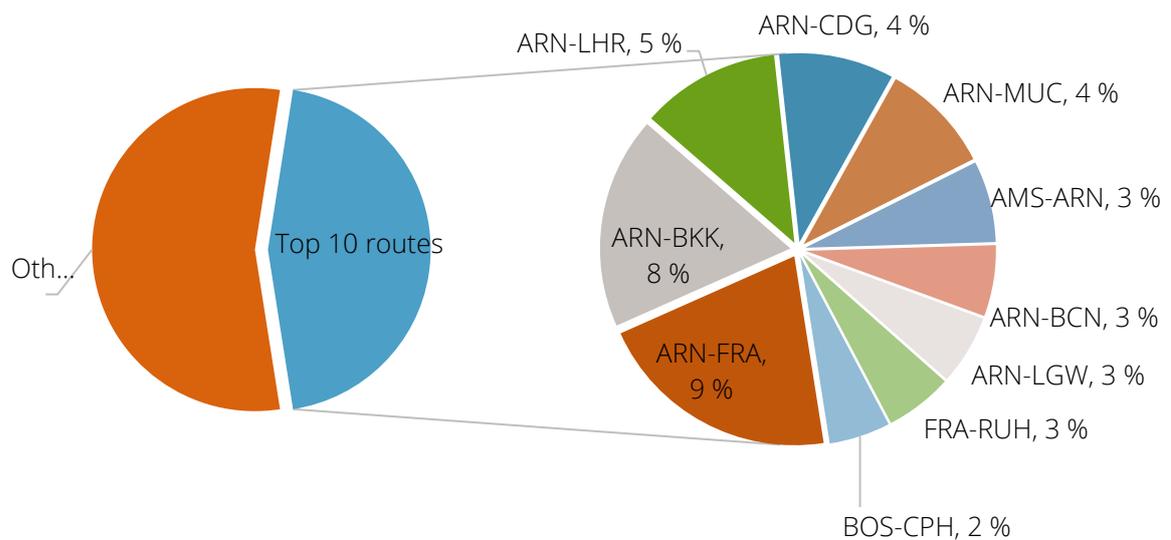


# Highest contribution to total emissions

Table: Top 10 routes by emissions

Route	No. flights	% of all flights	Emissions/flight (kg)	Total emissions (kg)	% of all emissions	Total distance (pkm)	% of all distance	Emissions /pkm (kg/pkm)
ARN-FRA	62	13 %	338	20 975	9 %	75 953	9 %	0,28
ARN-BKK	8	2 %	2 289	18 309	8 %	66 131	8 %	0,28
ARN-LHR	30	6 %	399	11 964	5 %	43 886	5 %	0,27
ARN-CDG	21	4 %	469	9 856	4 %	32 371	4 %	0,30
ARN-MUC	26	5 %	369	9 588	4 %	34 966	4 %	0,27
AMS-ARN	22	5 %	320	7 041	3 %	25 372	3 %	0,28
ARN-BCN	9	2 %	683	6 148	3 %	20 833	3 %	0,30
ARN-LGW	15	3 %	402	6 035	3 %	22 152	3 %	0,27
FRA-RUH	6	1 %	966	5 796	3 %	25 749	3 %	0,23
BOS-CPH	4	1 %	1 315	5 259	2 %	23 563	3 %	0,22
Other	279	58 %	441	123 080	55 %	441 547	54 %	0,28
<b>Total</b>	<b>482</b>	<b>100 %</b>	<b>465</b>	<b>224 050</b>	<b>100 %</b>	<b>812 524</b>	<b>100 %</b>	<b>0,28</b>

Share of emissions, sorted by total emissions per route

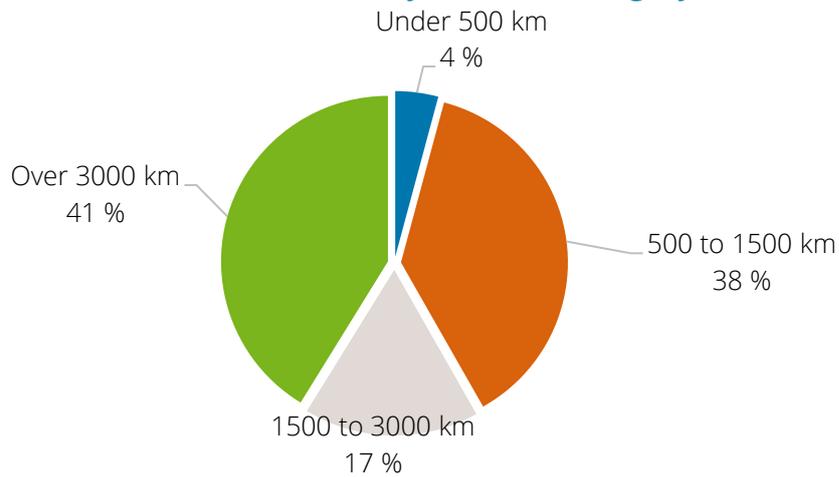


# Distance category

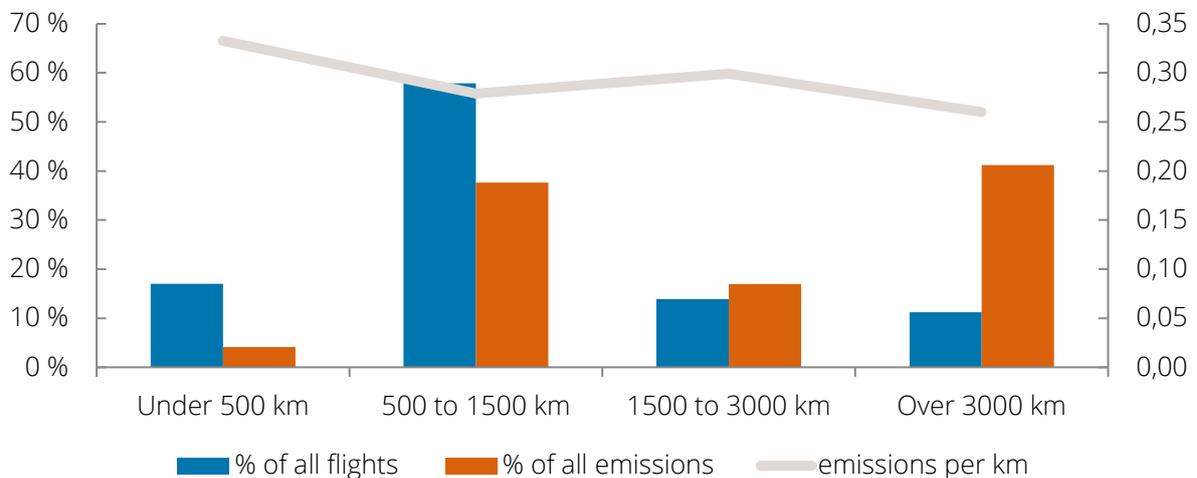
Table: Breakdown by distance category

Category	No. flights	% of all flights	Emissions/flight (kg)	Total emissions (kg)	% of all emissions	Total distance (pkm)	% of all distance	Emissions /pkm (kg/pkm)
Under 500 km	82	17 %	114	9 313	4 %	27 997	3 %	0,33
500 to 1500 km	279	58 %	302	84 358	38 %	302 353	37 %	0,28
1500 to 3000 km	67	14 %	567	38 000	17 %	126 994	16 %	0,30
Over 3000 km	54	11 %	1 711	92 379	41 %	355 181	44 %	0,26
<b>Total</b>	<b>482</b>	<b>100 %</b>	<b>465</b>	<b>224 050</b>	<b>100 %</b>	<b>812 524</b>	<b>100 %</b>	<b>0,28</b>

Share of emissions by distance category



Share of flights and emissions, emissions per pkm, by distance category



# Methodology

The climate impact calculations have been performed using the methodology developed by Tricorona, based primarily on data and methods developed by NTM, the Scandinavian Network for Transport and the Environment.

The NTM model calculates climate impact from direct carbon emissions only, and Tricorona has therefore corrected the resulting figures to account for climate impact arising due to high altitude. This is achieved by multiplying the calculated figures for carbon emissions by a factor of 2.7. The factor 2.7 is based on Tricorona's interpretation of IPCC research reports: <http://www.ipcc.ch/ipccreports/sres/aviation/index.php?idp=64>

The per-passenger emissions are derived from the total flight emissions and assumptions about the seating configuration (passenger capacity) and cabin factor (load factor).

For full methodology please visit: <https://www.tricorona.se/klimatkompensation/berakningsmetod/>

Where the customer / travel agency data does not specify the aircraft used, Tricorona calculates based on the aircraft specified in the table below. Assumptions for cabin factor are also specified below.

*Table: Aircraft and cabin factor assumptions*

Category	Distance	Aircraft	capacity	Cabin factor
Local	Under 1500 km	A320	160	70%
Regional	1500 km to 3000 km	B737-600	115	70%
Continental	3000 km to 6000 km	B737-800	173	70%
Intercontinental	Over 6000 km	B747-400-Belly	440	90%