RDC

Aviation Emissions Report
February 22

Emissions analysis for largest markets - February 22 vs prior years

25 largest markets by total emissions

Date Origin Country	February 2020 Total CO2 (Tonnes)	February 2021 Total CO2 (Tonnes)	February 2022 Total CO2 (Tonnes)
United States	12,954,360	6,321,215	10,091,761
China	3,536,710	4,316,974	5,463,193
United Kingdom, UK	2,313,144	320,111	1,245,429
India	1,810,039	1,061,606	1,210,314
United Arab Emirates	1,842,326	578,314	1,133,822
Russian Federation	1,308,460	709,328	991,774
Spain and Canary Islands	1,264,189	239,358	909,501
Brazil	1,241,055	578,885	877,756
Japan	2,088,276	702,678	852,864
France	1,285,309	433,419	836,673
Germany	1,589,345	302,816	823,562
Mexico	972,099	594,059	816,142
Turkey	894,935	396,339	706,203
Canada	1,299,827	251,993	660,331
Australia	1,546,983	410,036	580,791
Indonesia	1,081,954	525,092	578,345
Qatar	754,332	406,805	574,212
Saudi Arabia	718,498	260,259	438,281
Italy	788,339	106,487	430,470
Netherlands	630,499	270,242	412,946
Republic of Korea	1,063,774	350,560	360,038
Singapore	882,188	176,673	344,353
Vietnam	606,937	342,675	318,753
Thailand	1,175,619	181,560	316,037
South Africa	462,056	128,364	256,902

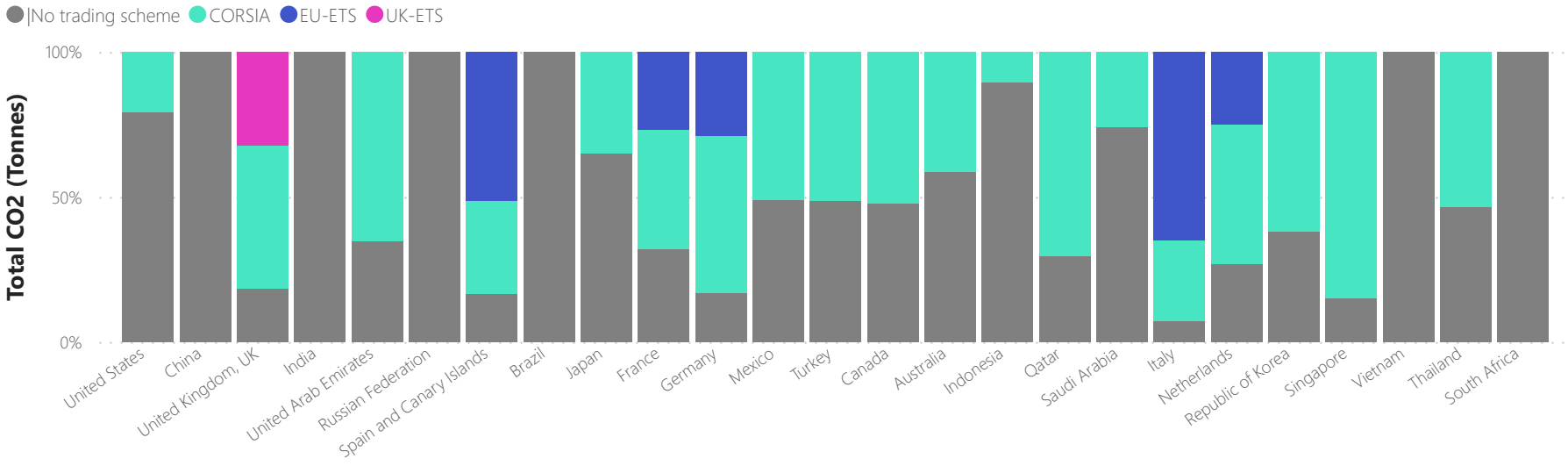
Change in Emissions - Current month vs prior years

This year vs last year	This year vs two years ago
60%	-22%
27%	54%
289%	-46%
14%	-33%
96%	-38%
40%	-24%
280%	-28%
52%	-29%
21%	-59%
93%	-35%
172%	-48%
37%	-16%
78%	-21%
162%	-49%
42%	-62%
10%	-47%
41%	-24%
68%	-39%
304%	-45%
53%	-35%
3%	-66%
95%	-61%
-7%	-47%
74%	-73%
100%	-44%

Percent of Emissions covered by Compliance Programmes

February 2020 % covered	February 2021 % covered	February 2022 % covered
-	17.76%	20.84%
-	-	-
27.99%	75.10%	81.75%
-	-	-
-	57.87%	65.15%
-	-	-
46.64%	75.91%	83.26%
-	-	-
-	32.29%	35.08%
23.87%	61.23%	67.87%
28.88%	77.24%	83.02%
-	44.39%	50.87%
-	42.09%	51.41%
-	37.58%	52.12%
-	34.45%	41.34%
-	9.47%	10.48%
-	72.53%	70.40%
-	13.64%	25.88%
46.81%	86.91%	92.82%
20.38%	68.34%	73.04%
-	57.78%	61.90%
-	85.28%	84.80%
-	-	-
-	52.04%	53.42%
-	-	-

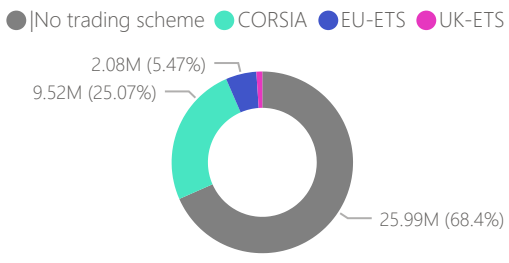
25 largest markets - emissions by Compliance Programme (current month)



Global emissions (tonnes)

37.99M

Emissions by compliance programme



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Emissions analysis for largest markets - YTD to Feb 22 vs prior years

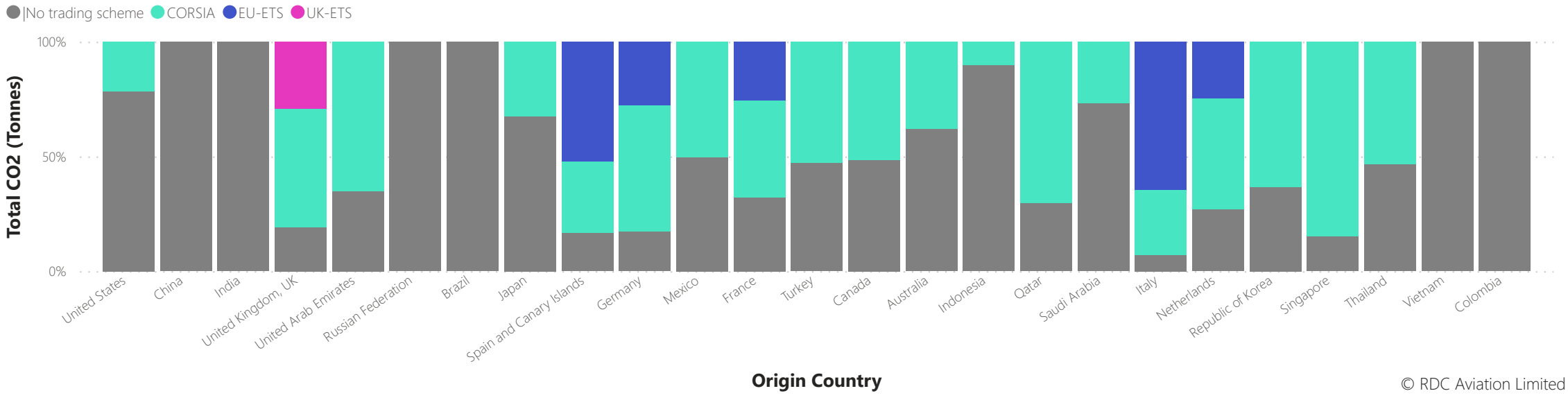
25 largest markets by total emissions

Change in Emissions - Current month vs prior years

Percent of Emissions covered by Compliance Programmes

YTD Period Origin Country	YTD 2 years ago Total CO2 (Tonnes)	YTD Last Year Total CO2 (Tonnes)	YTD This Year Total CO2 (Tonnes)	This YTD vs Last YTD	This YTD vs YTD two years ago	YTD 2 years ago Trading scheme %	YTD Last Year Trading scheme %	YTD This Year Trading scheme %
United States	27,157,056	13,256,005	21,337,656	61%	-21%	-	18.21%	21.62%
China	11,741,610	10,139,952	11,364,638	12%	-3%	-	-	-
India	3,763,764	2,193,093	2,602,827	19%	-31%	-	-	-
United Kingdom, UK	4,768,057	845,130	2,564,530	203%	-46%	27.04%	74.97%	80.95%
United Arab Emirates	3,916,819	1,250,198	2,374,114	90%	-39%	-	59.13%	65.21%
Russian Federation	2,775,692	1,525,428	2,177,923	43%	-22%	-	-	-
Brazil	2,667,149	1,391,009	1,965,570	41%	-26%	-	-	-
Japan	4,449,349	1,560,576	1,950,212	25%	-56%	-	30.65%	32.59%
Spain and Canary Islands	2,599,487	614,380	1,880,617	206%	-28%	45.98%	76.05%	83.18%
Germany	3,307,257	696,928	1,795,351	158%	-46%	27.61%	76.47%	82.61%
Mexico	2,033,629	1,299,681	1,769,572	36%	-13%	-	44.87%	50.37%
France	2,698,686	992,550	1,735,529	75%	-36%	23.10%	58.49%	67.88%
Turkey	1,887,578	838,755	1,516,051	81%	-20%	-	43.89%	52.63%
Canada	2,744,265	618,274	1,473,203	138%	-46%	-	38.44%	51.59%
Australia	3,409,121	877,302	1,297,272	48%	-62%	-	33.47%	37.86%
Indonesia	2,291,599	1,122,103	1,215,220	8%	-47%	-	8.77%	10.27%
Qatar	1,571,059	842,745	1,205,867	43%	-23%	-	72.77%	70.20%
Saudi Arabia	1,507,074	553,830	920,421	66%	-39%	-	14.44%	26.65%
Italy	1,676,074	258,143	899,055	248%	-46%	45.37%	87.60%	92.95%
Netherlands	1,315,640	613,098	884,793	44%	-33%	19.81%	69.28%	73.11%
Republic of Korea	2,302,199	732,725	762,640	4%	-67%	-	59.30%	63.40%
Singapore	1,924,744	360,177	713,888	98%	-63%	-	85.05%	84.75%
Thailand	2,570,792	422,901	682,726	61%	-73%	-	46.56%	53.21%
Vietnam	1,290,486	686,696	606,751	-12%	-53%	-	-	-
Colombia	606,166	299,372	539,253	80%	-11%	-	-	-

25 largest markets - emissions by Compliance Programme (current YTD)



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RDC CARE Index by carrier and home continent - February 22

Top 25 European Carriers

Carrier Name	CARE Index
Novair	7.7
Jonair	7.3
TUIfly Nordic	7.3
PLAY	7.2
Iberojet	7.2
Jet2	7.0
Wizz Air	7.0
La Compagnie	7.0
TUI Airways	7.0
SmartWings	6.9
French Bee	6.9
Buzz	6.8
Sunclass Airlines	6.8
Wizz Air UK	6.8
Corendon Airlines Europe	6.7
Freebird Airlines	6.6
Malta Air	6.6
Georgian Airways	6.6
HiSky Europe SRL	6.6
Corendon Dutch Airlines	6.5
Corendon Airlines	6.5
Ryanair	6.5
SunExpress	6.4
Azores Airlines	6.3
TUIfly Deutschland	6.3

Top 25 North American Carriers

Carrier Name	CARE Index
Air Transat	6.8
Frontier Airlines	6.7
Volaris	6.7
Flair Airlines	6.6
Sun Country	6.2
Sunwing Airlines	6.1
Swoop	6.1
Allegiant Air	5.9
WestJet	5.9
Air Saint-Pierre	5.7
Spirit Airlines	5.6
Air Canada Rouge	5.6
VivaAerobus	5.5
Avelo Air	5.4
Aeromexico	5.4
ConocoPhillips Alaska Inc	5.1
Aeromar	4.9
Delta Air Lines	4.7
American Airlines	4.7
United Airlines	4.6
Nolinor Aviation	4.3
Air Canada	4.2
WestJet Encore	4.1
Everts Air	4.1
Porter Airlines	4.1

Top 25 Asian Carriers

Carrier Name	CARE Index
AirAsia X	6.7
ZIPAIR Tokyo	6.7
STARLUX Airlines	6.7
Pan Pacific Airlines	6.6
Scoot	6.6
Air India Express	6.3
Nordwind Airlines	6.3
Nepal Airlines	6.3
Royal Flight	6.3
MIAT Mongolian Airlines	6.2
T'Way Air	6.2
airblue	6.1
Azur Air	6.1
NordStar Airlines	6.1
Pobeda	6.0
Longjiang Airlines	6.0
Himalaya Airlines	5.9
Grand China Air	5.9
Ural Airlines	5.9
West Air	5.9
Serene Air	5.9
Suparna Airlines	5.8
Izhavia	5.8
Qingdao Airlines	5.8
US-Bangla Airlines	5.8

Top 25 RoW Carriers

Carrier Name	CARE Index
Wizz Air Abu Dhabi	6.9
Arkia Israel Airlines	6.8
flydubai	6.6
SalamAir	6.5
Air Tahiti Nui	6.5
El Al	6.3
Syrian Air	6.2
LATAM Paraquay	6.1
Israir Airlines	6.0
Etihad Airways	6.0
Copa Airlines	5.9
JetSmart Airlines S.A.	5.9
UR Airlines	5.9
Tarco Aviation	5.9
Badr Airlines	5.8
FlyEgypt	5.8
JetSmart	5.8
Flybondi	5.8
Air Arabia Abu Dhabi	5.8
Surinam Airways	5.8
Air Cairo	5.8
Air Arabia	5.7
Sky Prime Aviation Services	5.7
Viva Air Peru	5.6
flyadeal	5.6

The CARE Index is a measure of airline route sustainability, based around our emissions methodology and various other factors, that has been developed to give business and consumers the best information on which to make their purchasing decisions - particularly when it comes to making more environmentally friendly choices. Most 'efficiency measures' use CO2 per passenger, per seat or per available seat kilometre (ASK), which can be hard to understand for consumers. The CARE Index creates a score between 0 (worst) to 10 (best) for any air route, airline and aircraft combination, taking into account:

- fuel burn and **efficiency of the aircraft type**
- **efficiency of the airline** – using specific seat capacity, configuration and overall occupancy rates (load factor)
- use of **Sustainable Alternative Fuels (SAF)**
- if the route is part of a **compliance or regulatory emissions programme** such as EU ETS etc
- whether the **operator offsets any emissions over and above that which is legally required**

The CARE index has been designed to be a force for change, giving consumers better insight into the environmental impact of their chosen airline that will also help to shape airline sustainability strategies.

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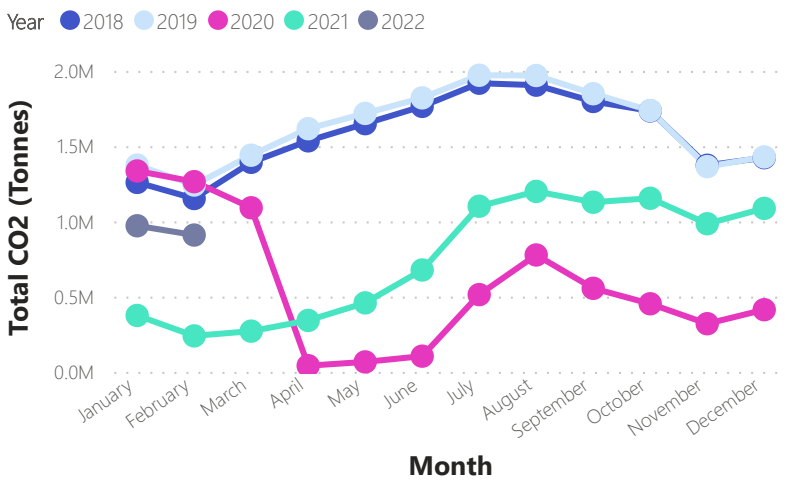
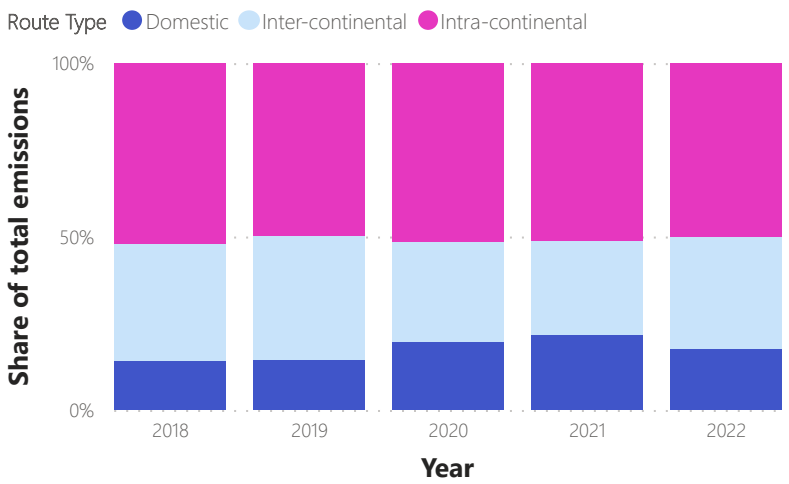
This month's focus country: Spain and Canary Islands

Total CO2 (Tonnes) by Month and Year



CO2 by Year and Route Type



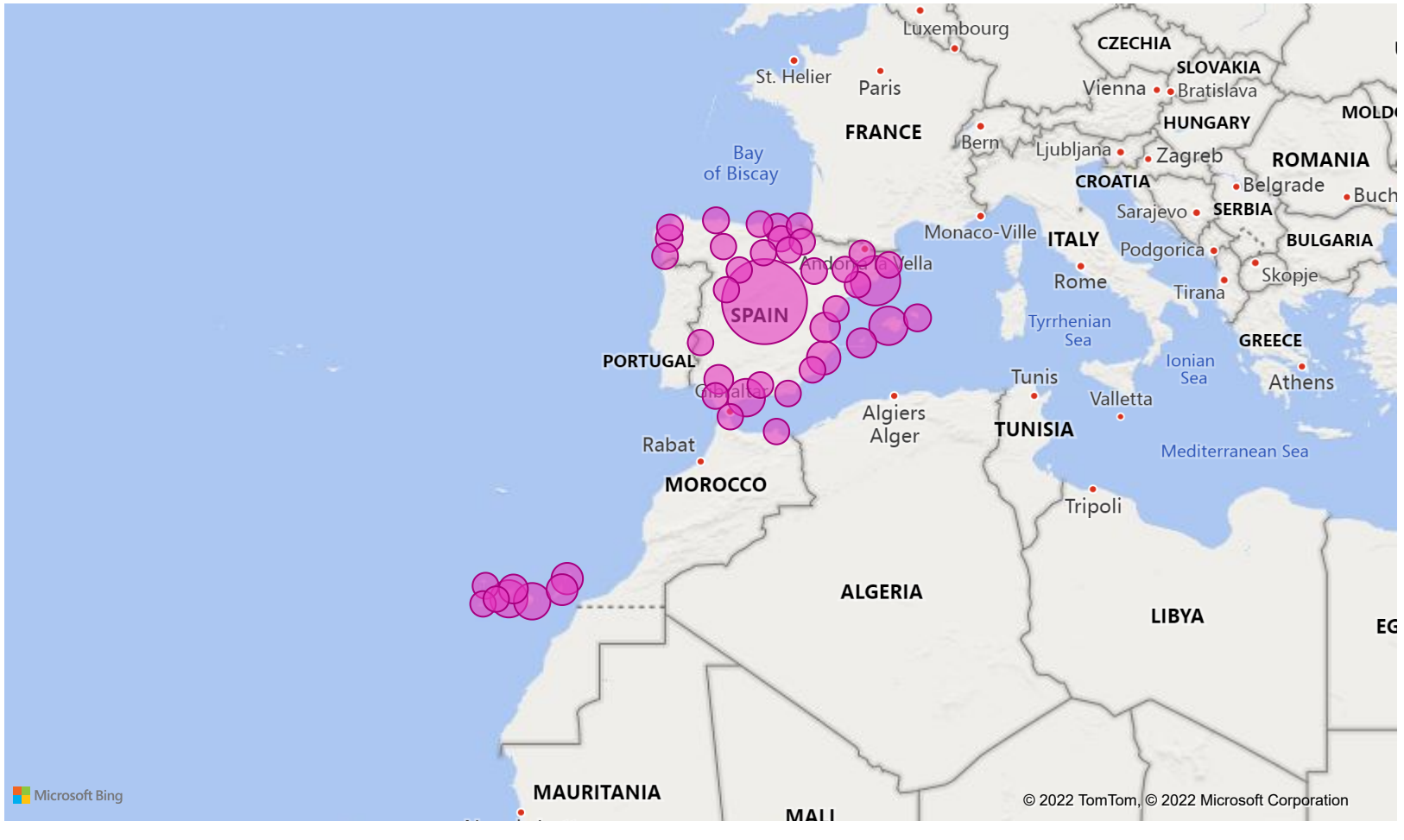
10 largest markets by seat capacity ranked by lowest Emissions per ASK - last 12 months

Destination Country	Emissions per ASK (g)	Total CO2 (Tonnes)
Netherlands	58.73	374,657
Germany	59.07	1,053,480
Ireland	59.20	140,711
United Kingdom, UK	59.65	1,282,071
Belgium	61.95	228,433
Italy	62.60	432,296
Switzerland	62.71	201,342
France	65.65	370,937
Spain and Canary Islands	70.14	2,157,021
Portugal	75.56	99,810

10 largest carrier by emissions ranked by highest total emissions - last 12 months

Carrier Name	Emissions per ASK (g)	Total CO2 (Tonnes)
Ryanair	63.09	1,437,870
Iberia	61.99	1,421,713
Vueling	62.56	1,060,115
Air Europa	59.24	640,627
easyJet	61.01	445,910
Iberia Express	61.09	351,295
Jet2	59.88	299,441
Malta Air	60.03	262,885
Air Nostrum	109.54	206,877
American Airlines	77.18	184,868

Largest origin airports by total emissions - last 12 months



10 most efficient routes according to RDC's CARE Index - current month

Carrier Name	Aircraft	Origin	Destination	CARE Index
Wizz Air	A321neo	ALC	BUD	7.9
Wizz Air	A321neo	BCN	KRK	7.9
Wizz Air	A320neo	FUE	MXP	7.9
Wizz Air	A321neo	BCN	WAW	7.9
Novair	A321neo	FUE	ARN	7.8
Novair	A321neo	LPA	ARN	7.8
Novair	A321neo	TFS	ARN	7.8
Wizz Air	A321neo	BCN	BUD	7.8
Novair	A321neo	TFS	OSL	7.8
Wizz Air	A321neo	BCN	VIE	7.8

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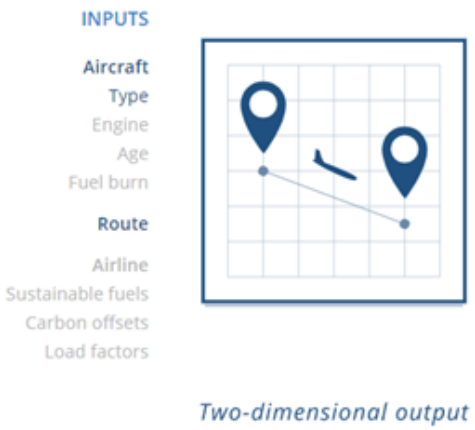
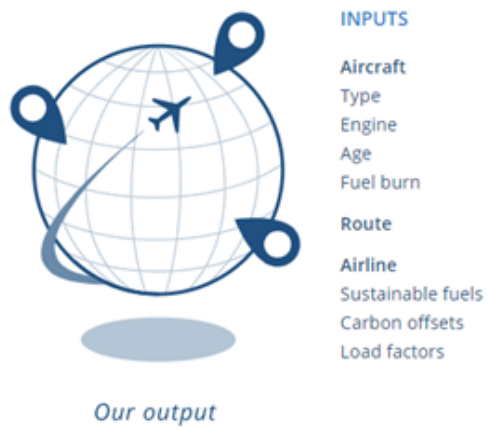
RDC is a UK-based data and technology provider to the international air transport industry. The company has over 300 clients of its **Apex** and **AirportCharges.com** products, which provide market intelligence to operators of aircraft and airports, as well as investors, OEMs and regulators.

For decades RDC have been monitoring and modelling the CO2 emissions arising from the growing aviation industry. We have the ability to calculate and report detailed airline operating expenses - including fuel burn, which in turn gives us the CO2 output from flying. For accuracy on CO2 emissions data, our accredited and independent methodology can't be beaten.

We passionately believe that business and consumers should be armed with the best information on which to make their purchasing decisions - particularly when it comes to making more environmentally friendly choices - this is why we developed our **CO2 calculator** and **CARE Index.**



Two-dimensional output



Our output

To find out more about how RDC can deliver CO2 emissions data for your business services, get in touch with:

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Global Account Director
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