

# 2022 United Airlines Environmental Performance Data

## Greenhouse Gas Emissions

	2022 metric tons CO <sub>2</sub> e	2021 metric tons CO <sub>2</sub> e	2020 metric tons CO <sub>2</sub> e
<b>Direct (Scope 1) emissions</b>	<b>30,401,144</b>	<b>21,370,485</b>	<b>15,485,363</b>
Mainline aircraft direct emissions	30,263,431	21,253,316	15,392,492
Conventional jet fuel	30,263,216		
Sustainable aviation fuel - CH <sub>4</sub> and N <sub>2</sub> O	215		
Mainline vehicles (diesel, gasoline, CNG, LPG) <sup>2</sup>	47,465	38,242	24,766
Facilities (natural gas combustion, engine test cells)	90,249	81,997	70,797
Dry ice from catering	0	1,720	2,015

	2022 metric tons CO <sub>2</sub> e	2021 metric tons CO <sub>2</sub> e	2020 metric tons CO <sub>2</sub> e
<b>Biogenic emissions - outside of scopes</b>	<b>26,806</b>		
Mainline aircraft emissions - CO <sub>2</sub> from sustainable aviation fuel	26,806		

	2022 metric tons CO <sub>2</sub> e	2021 metric tons CO <sub>2</sub> e	2020 metric tons CO <sub>2</sub> e
<b>Indirect (Scope 2) emissions</b>	<b>139,194</b>	<b>160,794</b>	<b>175,087</b>
Electricity consumption (location-based)	163,897	183,311	196,066
Electricity consumption (market-based)	139,193	160,794	175,087
Steam consumption	0	0	0

	2022 metric tons CO <sub>2</sub> e	2021 metric tons CO <sub>2</sub> e	2020 metric tons CO <sub>2</sub> e
<b>Other Indirect (Scope 3) emissions</b>	<b>13,108,411</b>	<b>5,561,745</b>	<b>4,280,317</b>
3: Mainline aircraft fuel production	7,015,089		
Conventional jet fuel	7,011,371		
Sustainable aviation fuel	3,718		

4: Regional aircraft direct emissions and fuel production	5,587,171		
Regional aircraft and bus-operated flights flown under capacity purchase agreement - direct emissions	4,504,664	5,294,725	4,053,435
Regional vehicles (diesel, gasoline, CNG, LPG) <sup>2</sup>	14,538	15,481	13,658
Regional aircraft flown under capacity purchase agreement - fuel production	1,030,533		
Regional aircraft flown on an at-risk basis - fuel production	37,437		
7: Employee commuting	111,108	52,278	80,980
14: Regional aircraft flown on an at-risk basis	163,902		
15: Ownership stake in Azul Brazilian Airlines	229,912	199,099	132,220
15: United Airlines Ventures investments <sup>3</sup>	1,229	162	24

	2022 metric tons CO <sub>2</sub> e	2021 metric tons CO <sub>2</sub> e	2020 metric tons CO <sub>2</sub> e
<b>Gross GHG emissions</b>	<b>43,648,748</b>	<b>27,093,024</b>	<b>19,940,767</b>
Carbon offsets	0	0	(4,106)
<b>Net GHG emissions</b>	<b>43,648,748</b>	<b>27,093,024</b>	<b>19,936,661</b>

## Efficiency numbers

	2022	2021	2020
Revenue passenger-miles (RPM - millions) - consolidated	206,791	128,979	73,883
Metric tons CO <sub>2</sub> e per million RPMs - consolidated <sup>4</sup>	210.0	208.5	268.1
Metric tons CO <sub>2</sub> e per million RPMs - consolidated <sup>5</sup>	210.0	208.5	268.2
Revenue ton-miles (RTMs – millions) - mainline	25,381	15,371	9,755
Revenue ton-miles (RTMs – millions) - consolidated	27,073		
Revenue ton-miles (RTMs – millions) - regional	1,692		
Revenue ton-miles (RTMs – millions) - cargo	63		
Metric tons CO <sub>2</sub> e per million RTMs - mainline <sup>4</sup>	1,203.3	1,401.1	1,605.9
Available seat-miles (ASMs – millions) - consolidated	247,858	178,684	122,804
Metric tons CO <sub>2</sub> e per million ASMs - consolidated <sup>4</sup>	175.2	150.5	161.3
Metric tons CO <sub>2</sub> e per million ASMs - consolidated <sup>5</sup>	175.2	150.5	161.3

## Energy consumption

	2022	2021	2020
Conventional jet fuel - Mainline aircraft (gallons – millions)	3,139	2,205	1,600

Sustainable aviation fuel - Mainline aircraft (gallons – millions)	3	1	1
Lifecycle reduction from SAF	86.9%		
Emissions reductions from SAF (metric tons CO <sub>2</sub> e)	3,419		
Conventional jet fuel - Regional aircraft (gallons – millions)	466	523	404
Electricity (MWh)	423,930	447,714	477,751
Natural gas (MM BTUs)	1,636,463	1,494,698	1,264,964

## Local air quality

	2022 tons	2021 tons	2020 tons
<b>NO<sub>x</sub> emissions from mainline aircraft</b>	<b>14,948</b>	<b>10,813</b>	<b>7,660</b>
<b>NO<sub>x</sub> emissions (old)</b>	<b>16,145</b>	<b>11,626</b>	<b>8,565</b>
Mainline aircraft (jet fuel)	14,948	10,813	7,660
Vehicles (diesel, gasoline, CNG, LPG) <sup>2</sup>	1,197	813	905
Facilities (Natural gas combustion, engine test cells)	154	121	130

	2022 tons	2021 tons	2020 tons
<b>SO<sub>2</sub> emissions from mainline aircraft</b>	<b>1,413</b>	<b>1,022</b>	<b>730</b>
<b>SO<sub>2</sub> emissions (old)</b>	<b>1,414</b>	<b>1,022</b>	<b>731</b>
Mainline aircraft (jet fuel)	1,413	1,022	730
Vehicles (diesel, gasoline, CNG, LPG)	0	0	0
Facilities (Natural gas combustion, engine test cells)	1	1	1

	2022 tons	2021 tons	2020 tons
<b>CO emissions from mainline aircraft</b>	<b>7,805</b>	<b>5,503</b>	<b>3,743</b>
<b>CO emissions (old)</b>	<b>16,762</b>	<b>10,507</b>	<b>9,207</b>
Mainline aircraft (jet fuel)	7,805	5,503	3,743
Vehicles (diesel, gasoline, CNG, LPG) <sup>2</sup>	8,865	4,921	5,388
Facilities (Natural gas combustion, engine test cells)	91	83	76

## Waste management

	2022 metric tons	2021 metric tons	2020 metric tons
<b>Waste – total</b>	<b>25,176</b>	<b>31,407</b>	<b>26,667</b>
Hazardous and non-hazardous waste generation	22,399	24,253	15,602
Catering – Municipal waste	2,776	10,367	11,066
Hazardous	Moved to new category	Moved to new category	Moved to new category
Non-hazardous/other waste	Moved to new category	Moved to new category	Moved to new category
<b>Recycling – total</b>	<b>6,112</b>	<b>5,818</b>	<b>4,468</b>
Non-catering – recycled	5,255	4,446	3,302
Catering – recycled	857	1,372	1,166

## Water consumption

	2022 millions of gallons	2021 millions of gallons	2020 millions of gallons
Billed water consumption <sup>6</sup>	329	661	484

### Footnotes:

1. United accounts emissions reductions associated with the use and combustion of sustainable aviation fuel (SAF) to be a Scope 1 reduction, as it is in-sector and a sustainable alternative to the conventional jet fuel usage that is accounted in the gross emissions of this Scope. This is an interpretation of the GHG Protocol, until such time that an accepted GHG accounting methodology is developed to reflect in-sector reductions associated to biogenic products.
2. United changed to a more straightforward methodology to determine GHG emissions from GSE starting with 2018 reporting, but has not restated prior years; this change also re-allocated GHG emissions between Mainline and Regional GSE
3. United Airlines Ventures investments in Alder Fuels, Archer Aviation, Boom, Clear, Fulcrum BioEnergy, Heart Aerospace, and ZeroAvia (some of which may not have developed GHG inventories yet)
4. Excludes United Airlines Ventures investments and ownership stake in Azul Brazilian Airlines
5. Excludes SAF, United Airlines Ventures Investments, and ownership stake in Azul Brazilian Airlines
6. Does not account for all United locations or locations shared with other companies (e.g., airport terminals) and as a result may change considerably from year to year

Totals may not add up due to rounding.