

# Future of Aircraft Leasing

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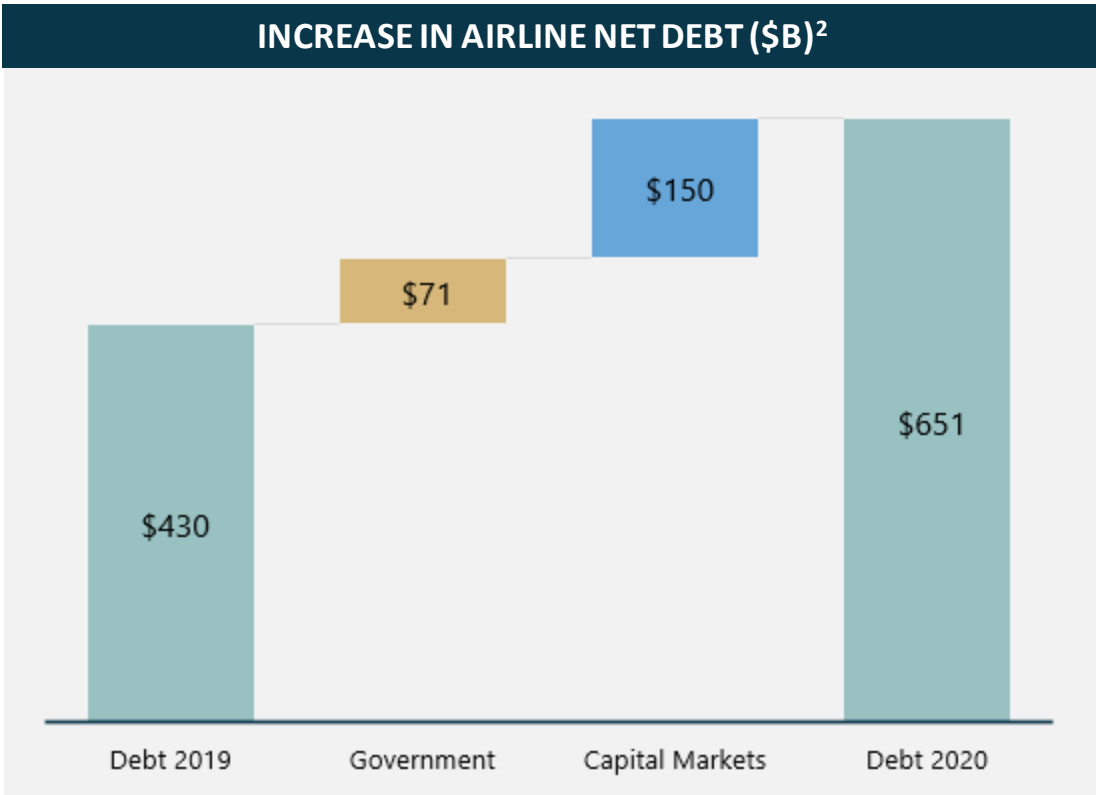
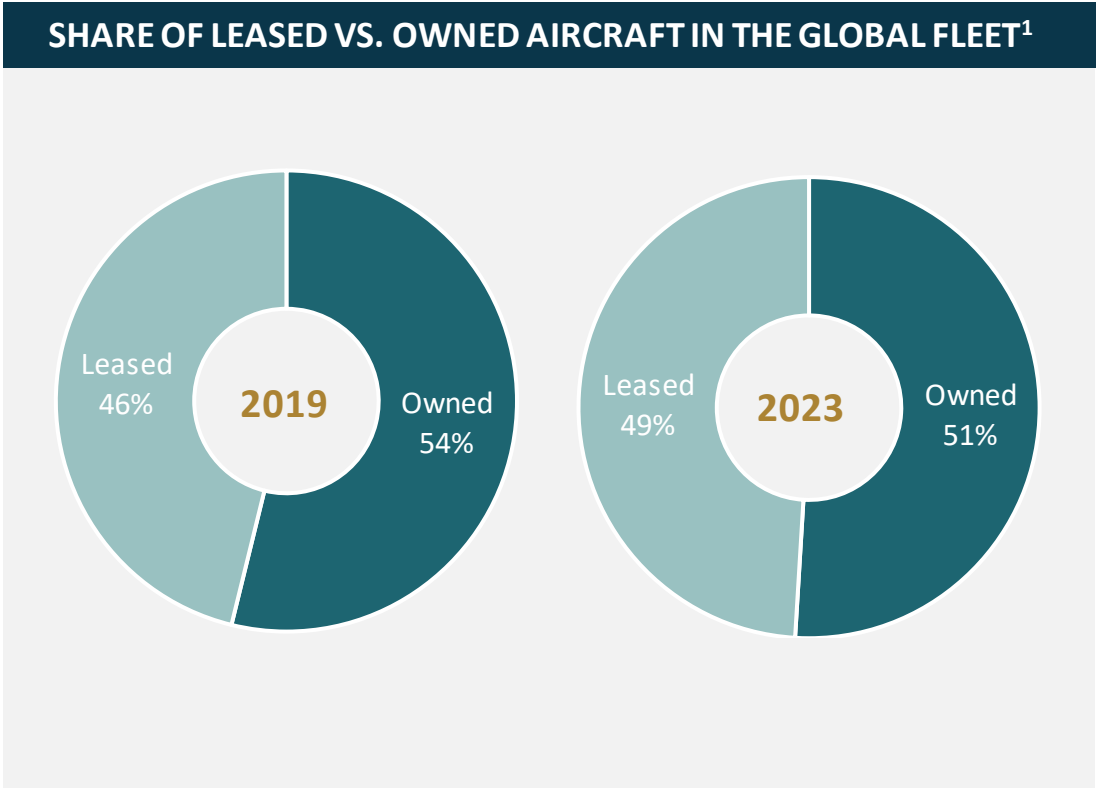
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TRADE SECRET AND STRICTLY CONFIDENTIAL

# Global Aircraft Fleet: Leased vs. Owned Aircraft

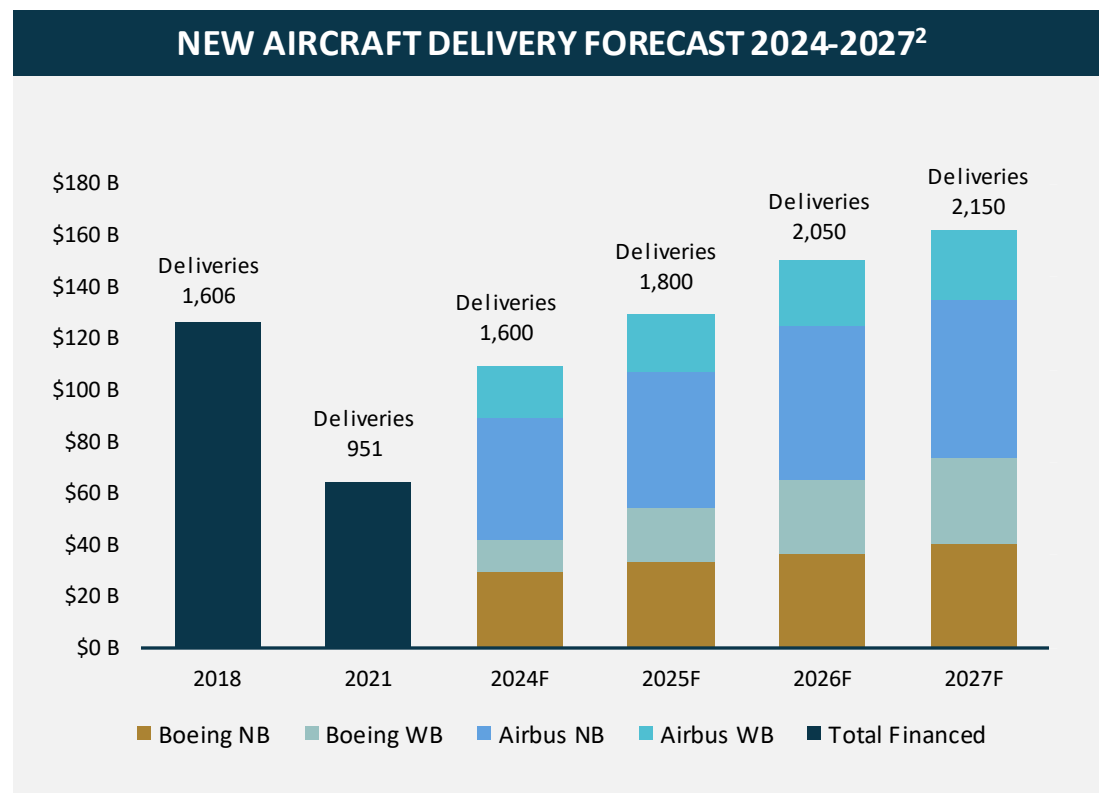
The share of leased aircraft has continued to grow through and beyond the COVID era due to the debt airlines took on during the pandemic



1. Fleet Analyzer, Ascend by Cirium, as of October 20, 2023. Includes in service and in storage passenger jets only. Period 2019-2023. Manager Company Category, Finance or Airline. Each year's snapshot is as of January 31.  
2. "Understanding the pandemic's impact on the aviation value chain." IATA. December 6, 2022.

# OEM Production Forecast

Aviation finance is a capital-intensive industry requiring specialized expertise and approximately \$140B annually to finance new deliveries beginning in 2024<sup>1</sup>



### MONTHLY PRODUCTION RATES<sup>3</sup>

OEM	2018	2021	Current (July 2024)	YE 2024 Target
<b>Airbus</b> (A220, A320neo, A350)	70	57	60	85
<b>Boeing</b> (737 MAX, 777, 787)	67	30	38	59

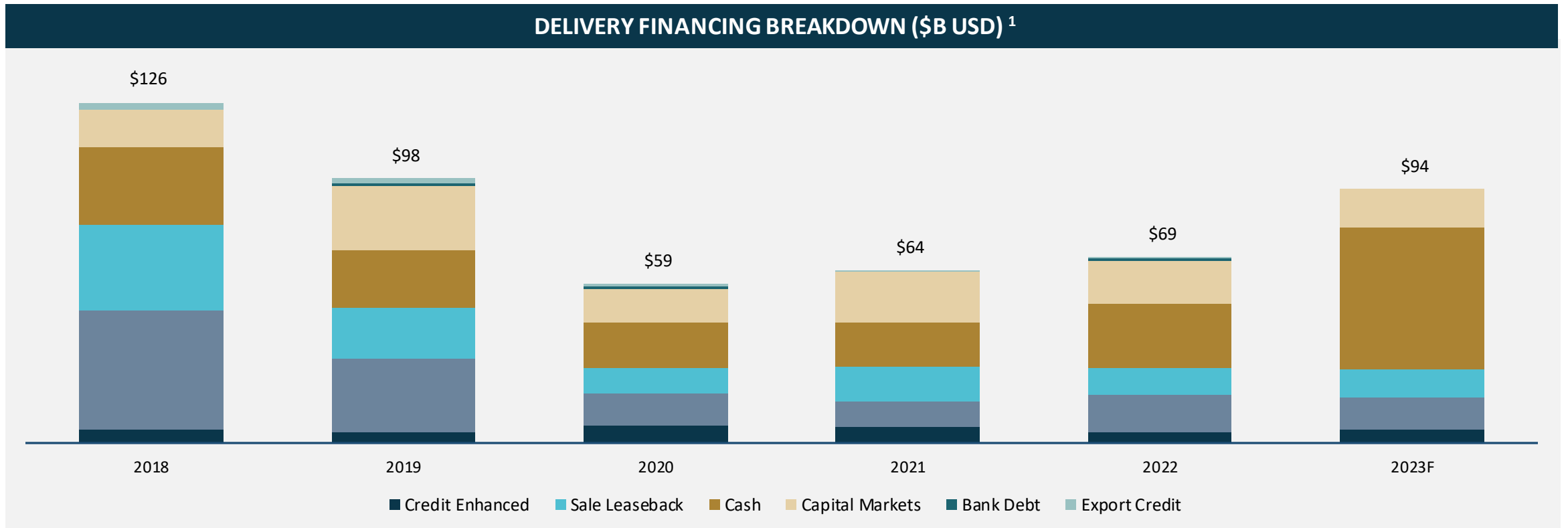
1. Carlyle Aviation’s evaluation of estimated 2024-2027 financing requirements are based on our analysis of planned aircraft retirements and forecasted aircraft deliveries informed by public announcements and interim financial reports on production rates as published by the OEMs. Valuation estimates are based on AVITAS data retrieved Apr. 4, 2023. Expectations related to financing requirements are based on the delivery funding forecast presented in Boeing’s Commercial Market Outlook 2022-2041 and Airbus’ Global Market Forecast 2022-2041. Carlyle Aviation assumes the 2023 estimates of funding sources presented in Boeing and Airbus materials will remain materially consistent through the Fund’s investment period. See disclosures at the beginning of this Presentation for discussion of “forward-looking statements.”

2. Graph by Carlyle Aviation, based on interim financial reports and press releases published by OEMs; Boeing, “Financial News Releases,” 2023; Airbus, “Latest News,” 2023.

3. Target production rates are based on Carlyle Aviation analysis of historical and OEM rate announcements. Production rates compiled from Airbus/Boeing press releases and interim financial reports.

# Aircraft Funding and Deliveries

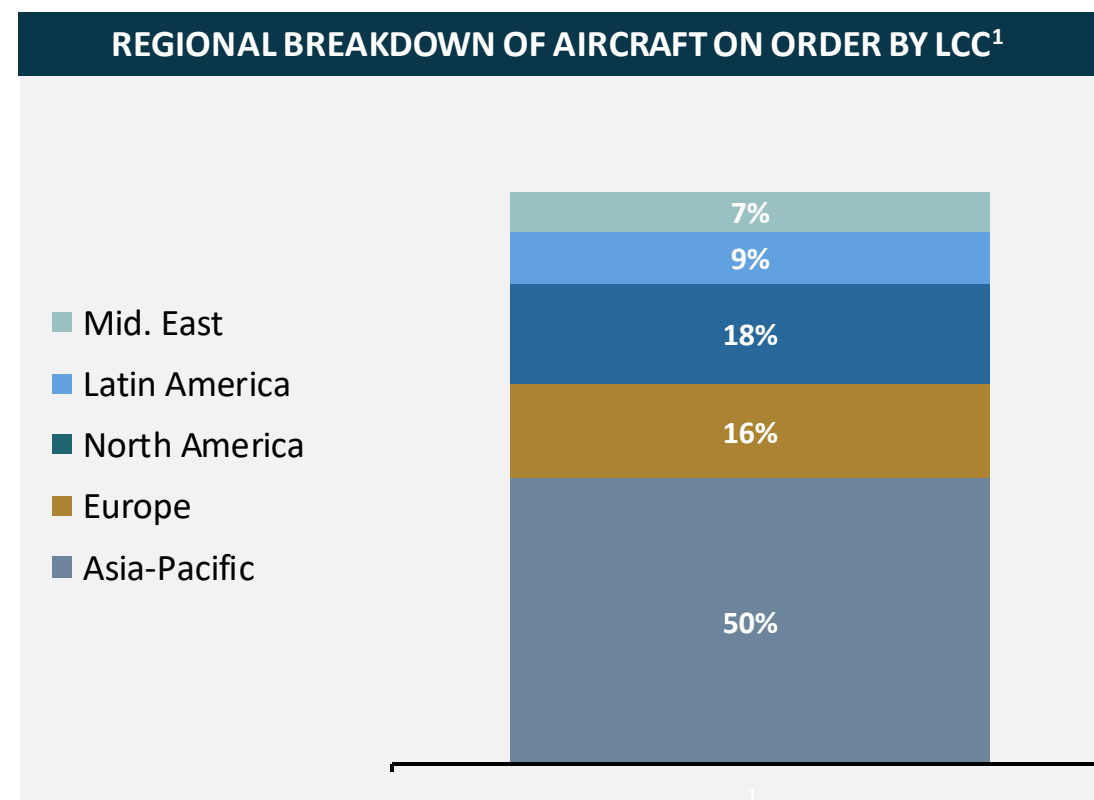
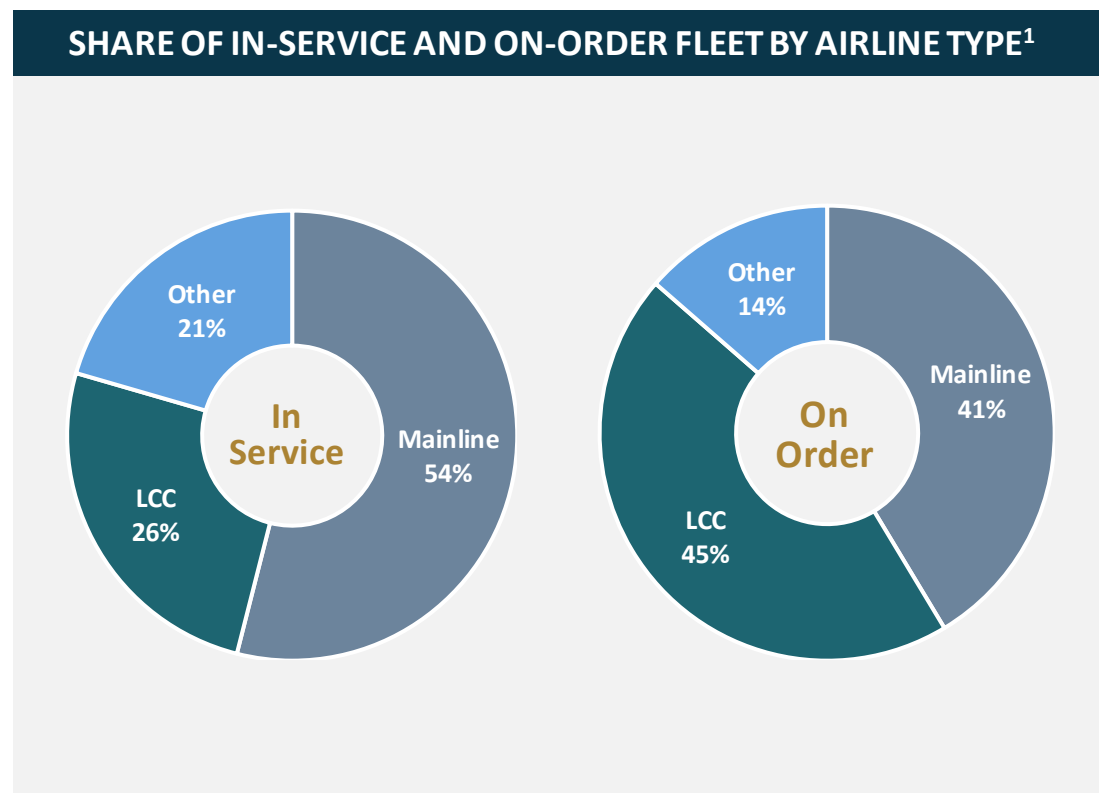
We believe that leasing platforms will continue to support a steady stream of deliveries across the remainder of the decade through Sale-Leaseback and Orderbook transactions



1. Boeing Commercial Aircraft Financing Market Outlook 2023. March 17, 2023.

# Increased Demand from Low-Cost Carriers and Asia-Pacific

Low-cost carriers (“LCC”) are set to grow in prominence with the largest share of the orderbook



1. Fleet Analyzer, Ascend by Cirium, as of October 20, 2023. Includes in service and in storage passenger jets only. Period 2023. Operator Company Category, Mainline, Low-Cost Carriers or Other.

# Lessor Landscape

The leasing industry, which had historically been highly consolidated, became more fragmented over the past decade; recent activity indicates a transition into a new period of consolidation

## 2010: HIGHLY CONCENTRATED

Top 15 Lessors

**76%**

*of In-Service Global Leased Fleet*

Top 15 Average Fleet Size

**158 aircraft**

Lessors with 25+ Aircraft

**33 lessors**

## 2019: NEW ENTRANTS

Top 15 Lessors

**55%**

*of In-Service Global Leased Fleet*

Top 15 Average Fleet Size

**315 aircraft**

Lessors with 25+ Aircraft

**72 lessors**

## 2023: M&A ACTIVITY

Top 15 Lessors

**60%**

*of In-Service Global Leased Fleet*

Top 15 Average Fleet Size

**350 aircraft**

Lessors with 25+ Aircraft

**68 lessors**

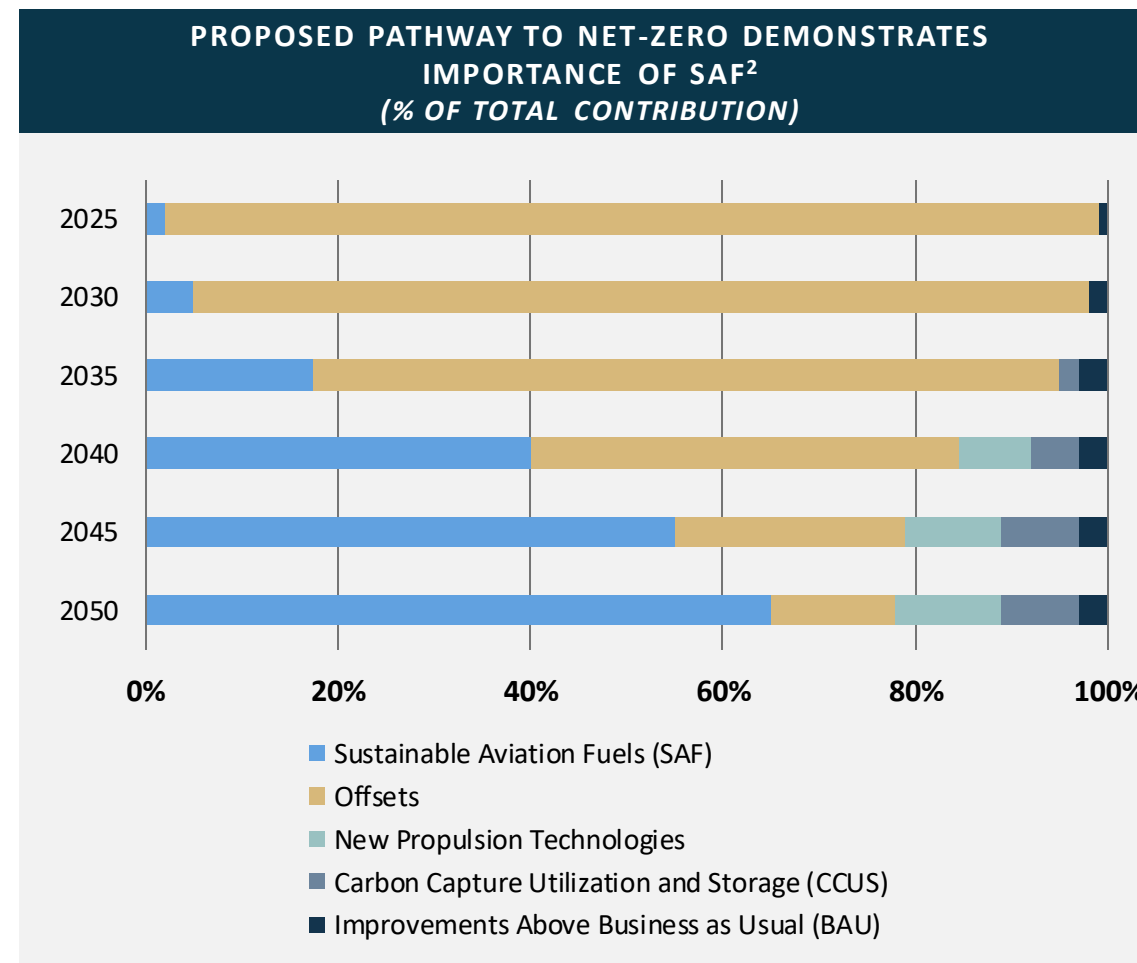
# Sustainability & Aviation: A Focus on Emissions

**We believe greenhouse gas emissions is one of the primary sustainability focus areas for aviation**

Aviation accounts for 2.5% of global CO<sub>2</sub> emissions<sup>1</sup>

- Aviation industry is facilitating transition to net zero flight with IATA member airlines having committed to achieving net-zero carbon emissions from their operations by 2050<sup>2</sup>

Plans for net zero are centered on delivering maximum reductions at the source, with Sustainable Aviation Fuels providing the bulk of reductions



Note: Statements describing the aviation industry's goals with respect to emissions &/or reduced fuel consumption of next generation aircraft when compared to prior generations of aircraft should not be interpreted to indicate that Carlyle Aviation seeks to achieve ESG-related objectives on behalf of its clients or that Carlyle Aviation clients are precluded from certain types of investments due to ESG-related criteria.

1. "Global Outlook for Air Transport, December 2022." IATA. (<https://www.iata.org/en/iata-repository/publications/economic-reports/global-outlook-for-air-transport---december-2022/>). December 6, 2022.

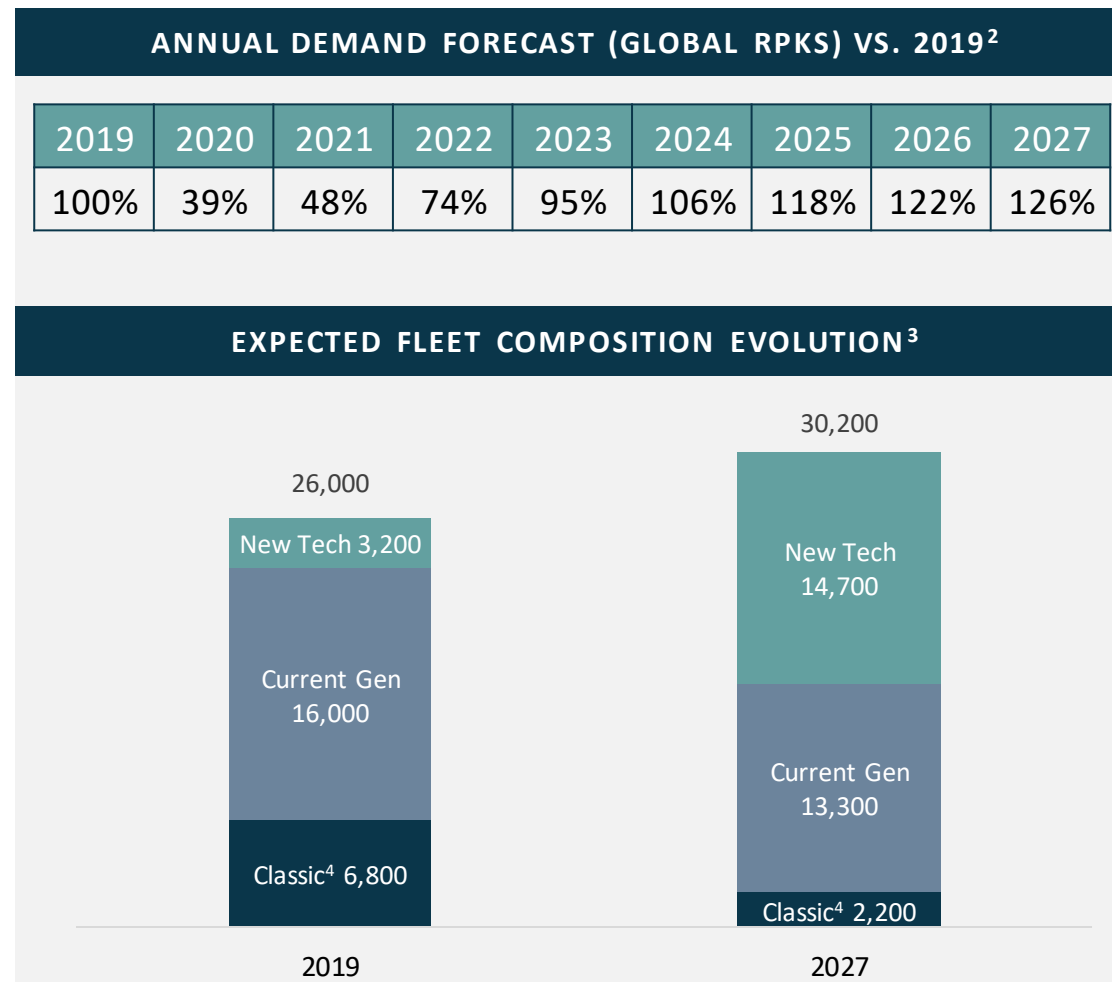
2. "Net Zero Resolution Fact Sheet." IATA. <https://www.iata.org/en/iata-repository/pressroom/fact-sheets/fact-sheet---iata-net-zero-resolution>. Published June 2023.

The statements made on this slide are opinions & beliefs of Carlyle & should not be relied upon as a promise or representation as to past or future performance. There can be no assurance that related trends will continue.

# Demand for Aircraft Continues to Outpace Supply

**Aircraft OEMs anticipate demand for approx. 40,000 new commercial aircraft over the next 20 years<sup>1</sup>**

- Domestic air travel demand has made strong recovery across several regions with international traffic gaining momentum as restrictions ease.
- Total supply of passenger aircraft is expected to be 30,200 in 2027 (up from approx. 26,000 aircraft in 2019)
- Total aircraft demand, given passenger traffic forecasts, will be in excess of 32,000 aircraft, indicating a 2,000 aircraft supply shortfall



1. Boeing, Commercial Market Outlook 2023-2042, June 17, 2023; Airbus, Global Market Forecast 2022-2041, June 13, 2023.  
 2. Based on (i) ACI, "Global passenger traffic expected to recover by 2024 and reach 9.4 billion passengers." Published September 27, 2023. (ii) IATA, "Global Outlook for Air Transport." Published June 5, 2023.  
 3. 2027 global fleet composition is based on data compiled from Q1 2023 interim financial results reported by Airbus and Boeing and Carlyle Aviation's evaluation of planned aircraft retirements and forecasted aircraft deliveries informed by public announcements and interim financial reports on production rates as published by the OEMs. Valuation estimates are based on AVITAS data, accessed April 4, 2023.  
 4. "Classic" aircraft refers to older generation aircraft that are no longer in production, such as the 737 Classic, 757 and A300.