

Forecast: Asset Valuations and Lease Rates

June 4, 2025

Engine Leasing, Trading &
Finance (ELTF) Europe

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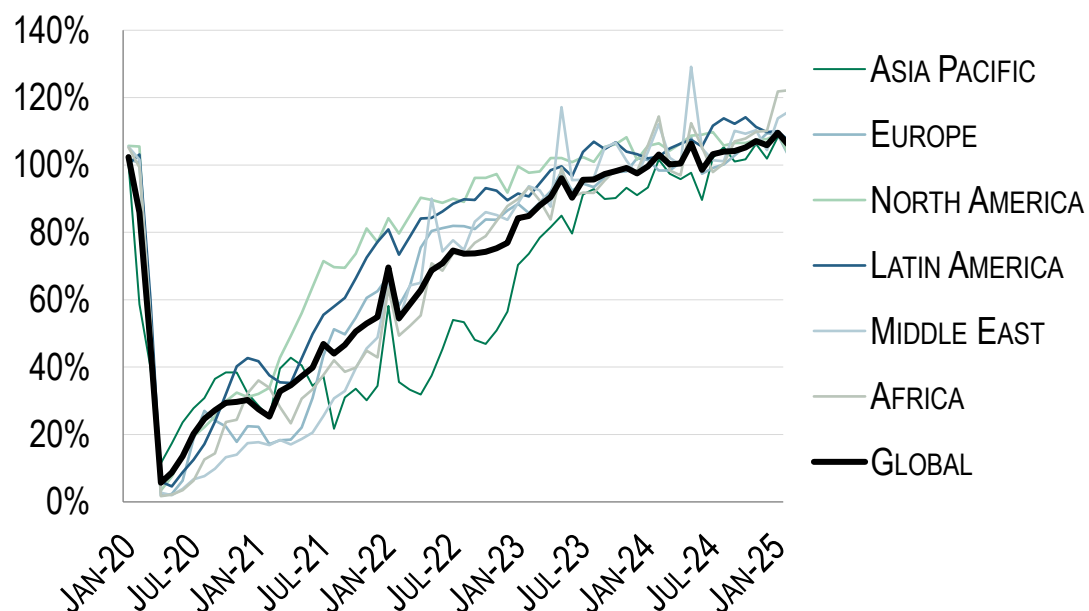
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1. AVIATION INDUSTRY TRENDS

The background of the slide features a series of overlapping triangles in two shades of green: a lighter teal and a darker forest green. These triangles are arranged in a way that creates a sense of depth and movement, with some pointing upwards and others downwards, forming a complex, abstract pattern.

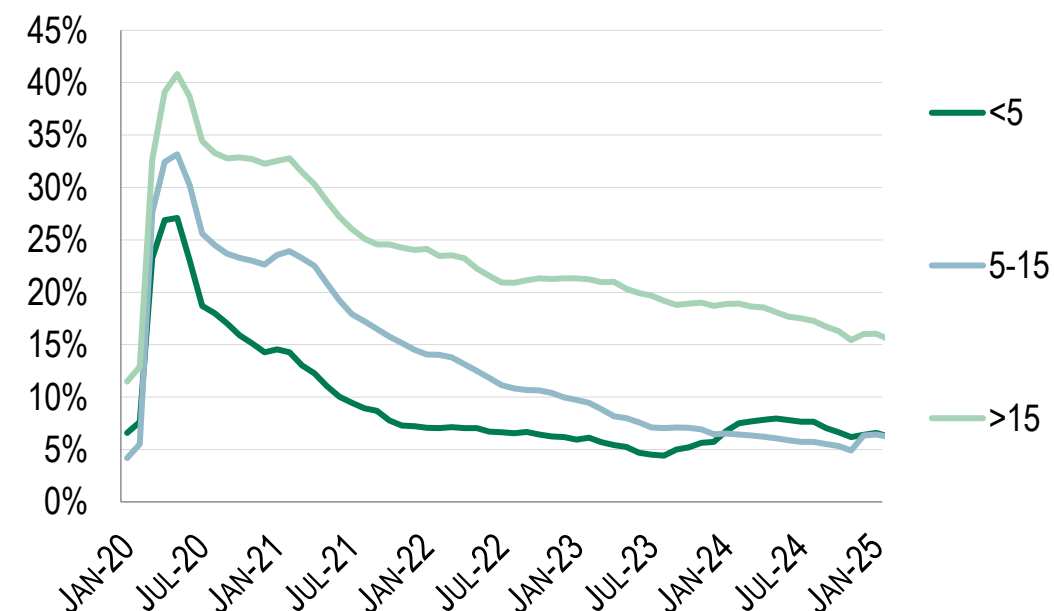
The global aviation market has recovered fully from COVID levels, with traffic surpassing 2019 levels and parked fleet levels normalizing

PASSENGER AIR TRAFFIC DEMAND RECOVERY (2019=100)



- Global passenger air traffic levels reached 2019 levels in 2024, showing a recovery from COVID levels; March 2025 RPK levels were 3.4% higher than January 2019
 - All regions experienced higher Q1 2025 levels than 2019
 - Latin America experiences the strongest growth vs 2019 levels, while North America, Europe, and Asia Pacific see similar performance

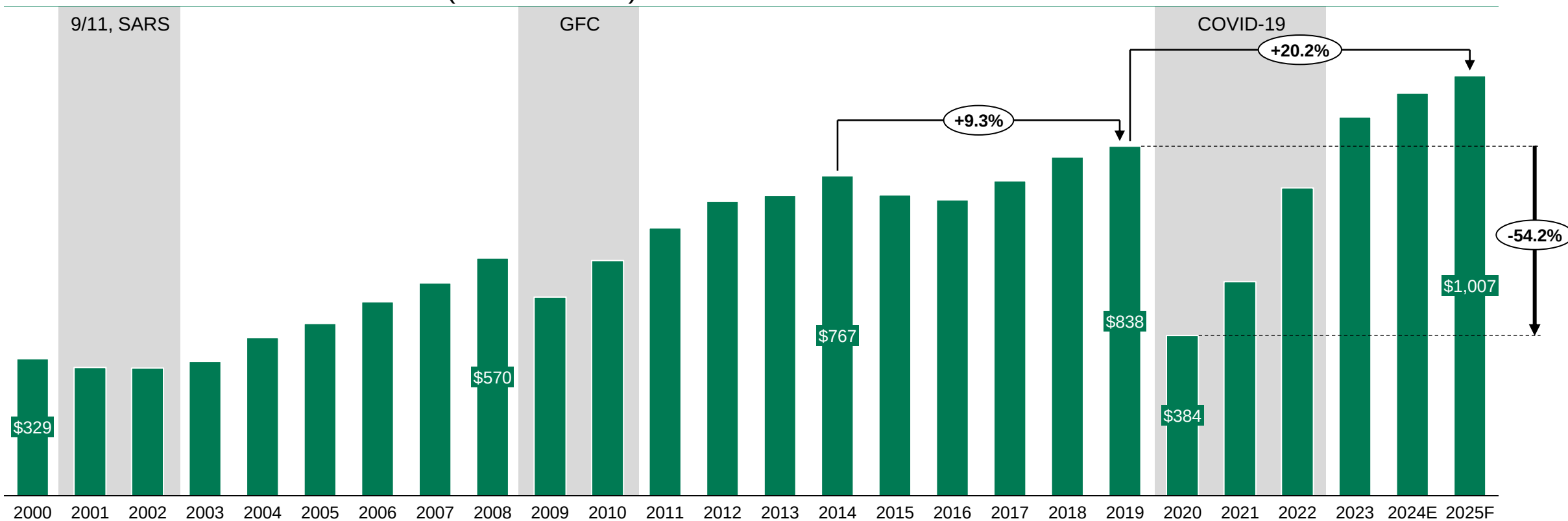
PASSENGER AIRCRAFT PARKED % OF FLEET BY AGE



- Both during and following the COVID recovery, mid-life and older assets continue to see fleet reactivations
- The proportion of younger fleet parked ticked up in 2024 due to GTF powdered metal airworthiness directive
- Early 2025 has seen slight increased in parked fleet levels

On the back of traffic growth and a healthy yield environment, airline revenue growth has been significant following the COVID pandemic

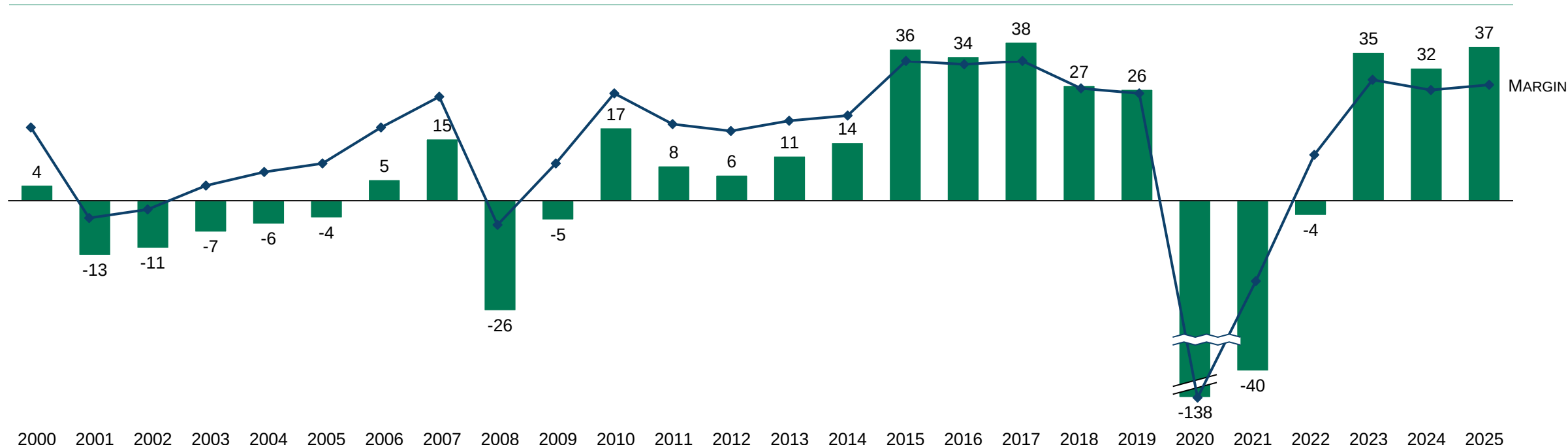
GLOBAL AIRLINE INDUSTRY REVENUE (US \$ BILLIONS)



The airline industry has shown resilience following recent economic downturns; global revenues surpassed 2019 levels in 2023, and are expected to continue increasing to record highs in 2025 (20% higher than '19 levels)

In addition to strong top-line performance, the airline industry appears poised to enjoy sustained profits in 2025

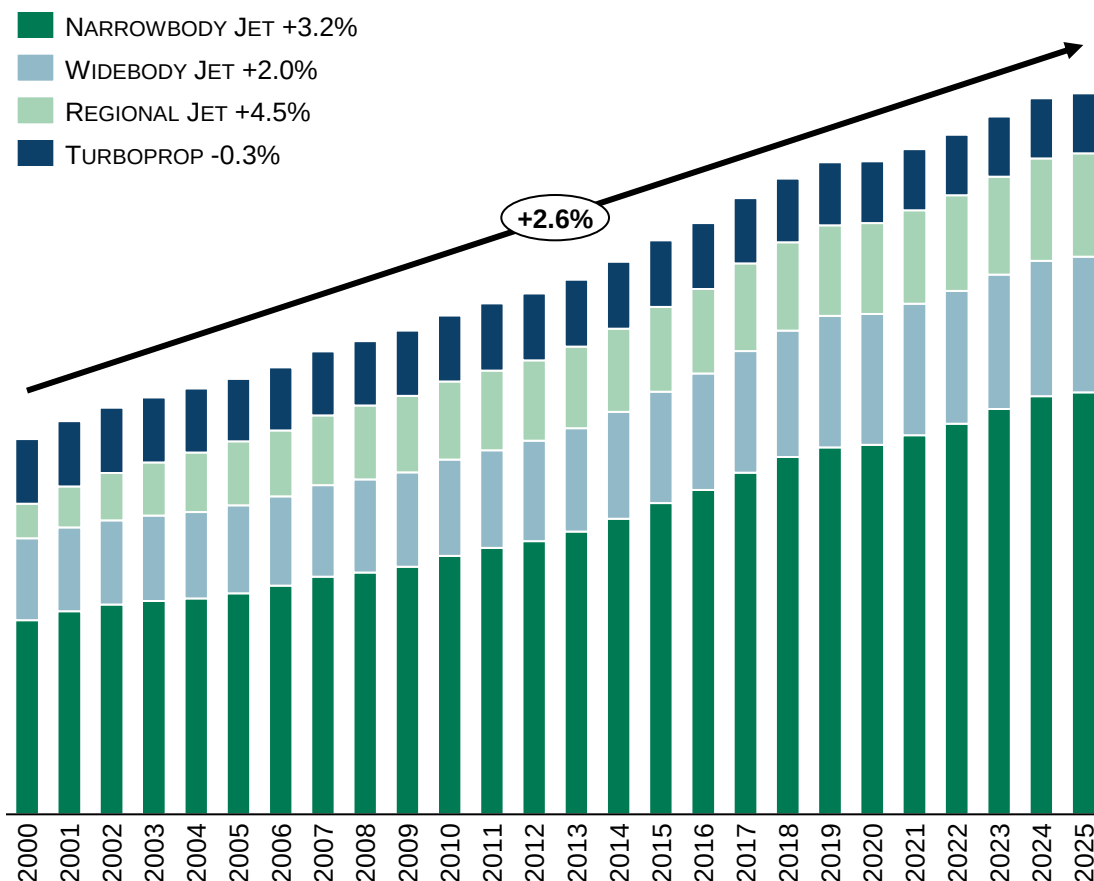
GLOBAL AIRLINE INDUSTRY PROFITS AND MARGIN



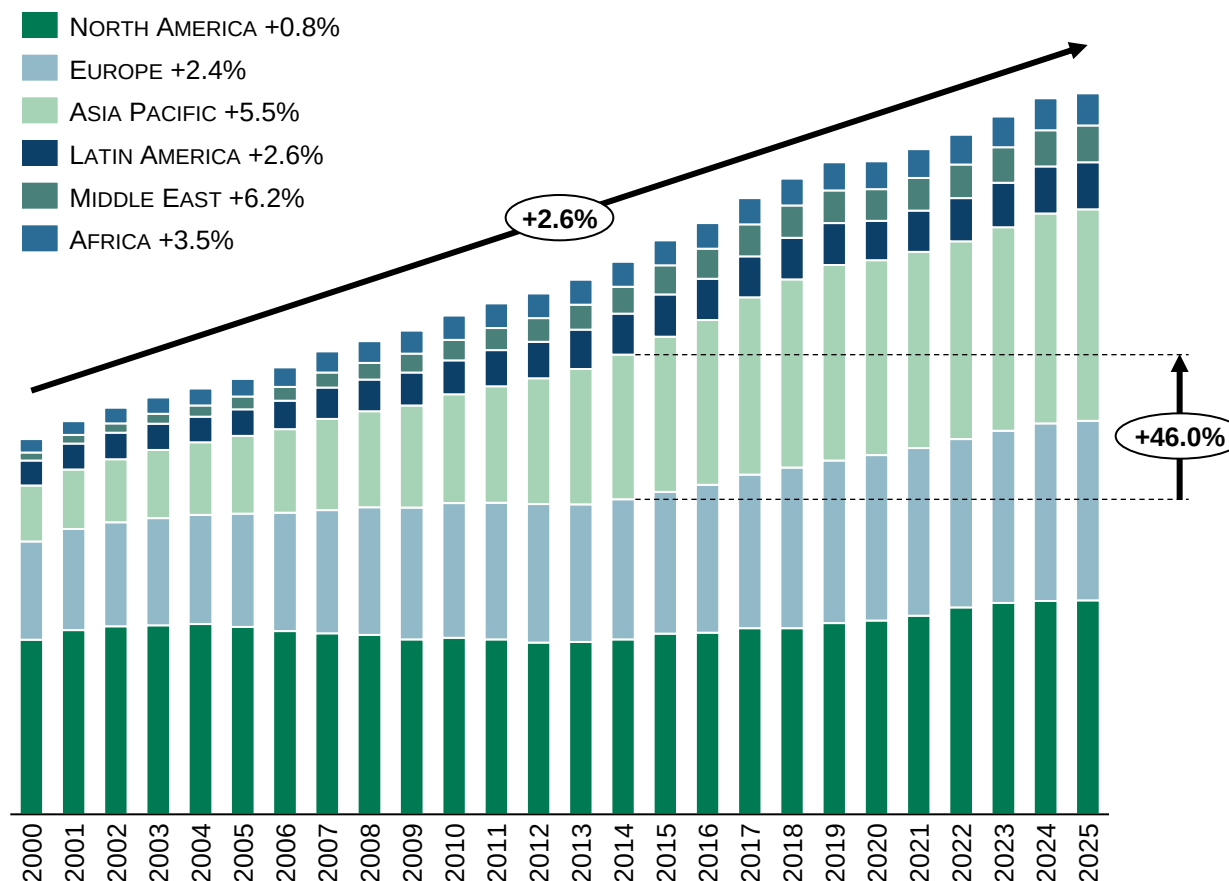
- Airlines have shown resilience through many crises; losses induced by COVID-19 were unprecedented, with the recovery slowed by various macroeconomic dynamics and developments (e.g., Russia's invasion of Ukraine, inflationary pressures)
- Despite the challenges, the airline industry was profitable in 2023 and 2024, and is expected to enjoy similar profits in 2025
- Nonetheless, the respective 3.5-4.0% profit margins seen through 2023 and 2025 are below the ~5% margins seen in 2015-2017

The global fleet is currently at ca. 34,000 aircraft, and has shown robust growth since 2000 (CAGR of 2.6%); Asia Pacific is the largest driver of growth

GLOBAL FLEET¹ BY TYPE



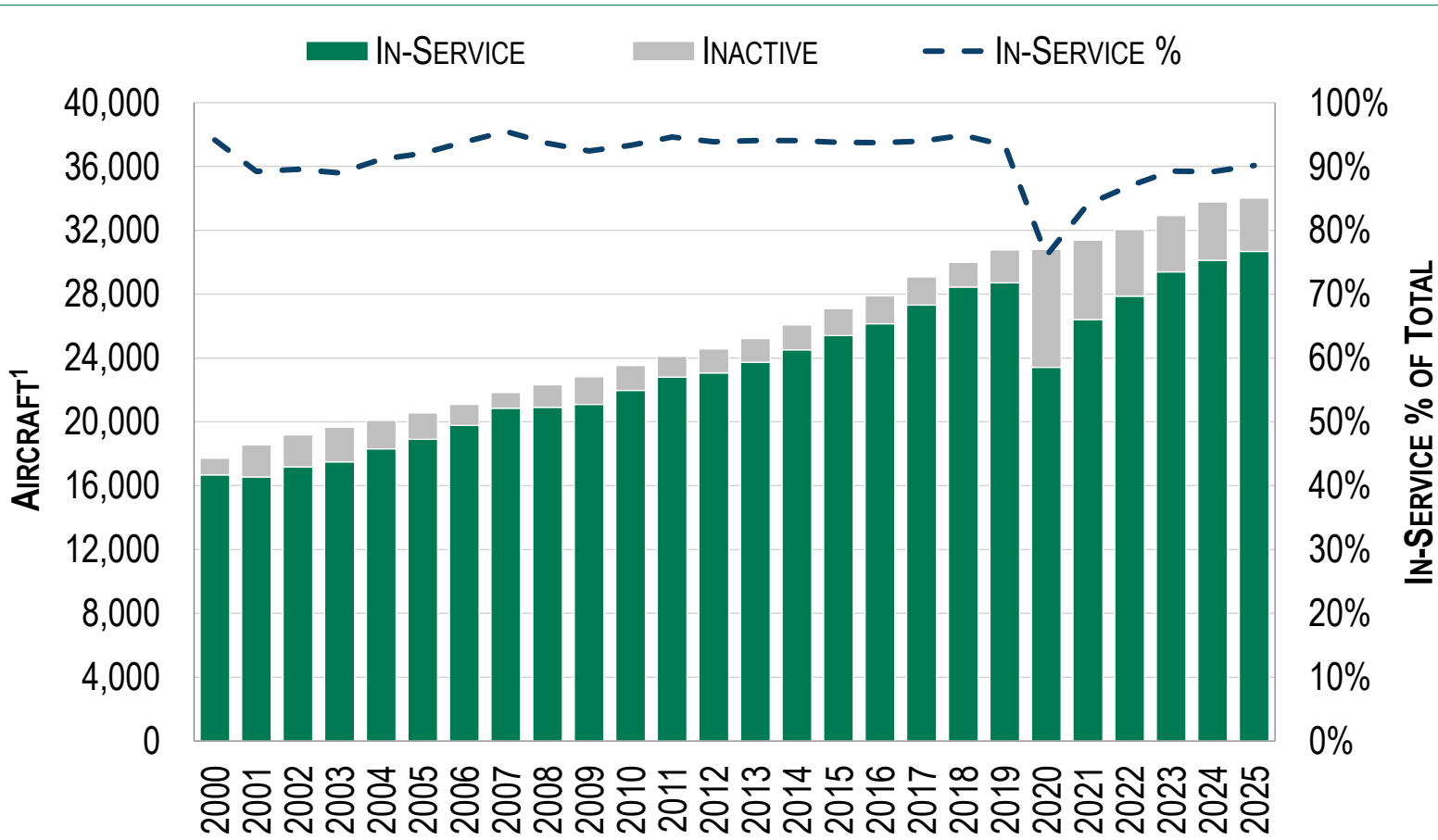
GLOBAL FLEET¹ BY REGION



Note: [1] Fleet shown includes in-service and inactive passenger and cargo aircraft
Source: CAPA

Narrowbody aircraft have driven the total in-service fleet to 107% of the 2019 fleet size; turboprop fleet size is 85% and 79% of 2019 and 2014 fleets, respectively

FLEET¹ TRENDS



2025 FLEET¹ IN-SERVICE

	as % of 2019
Narrowbody	113%
Widebody	102%
Regional Jet	102%
Turboprop	85%
Total	107%

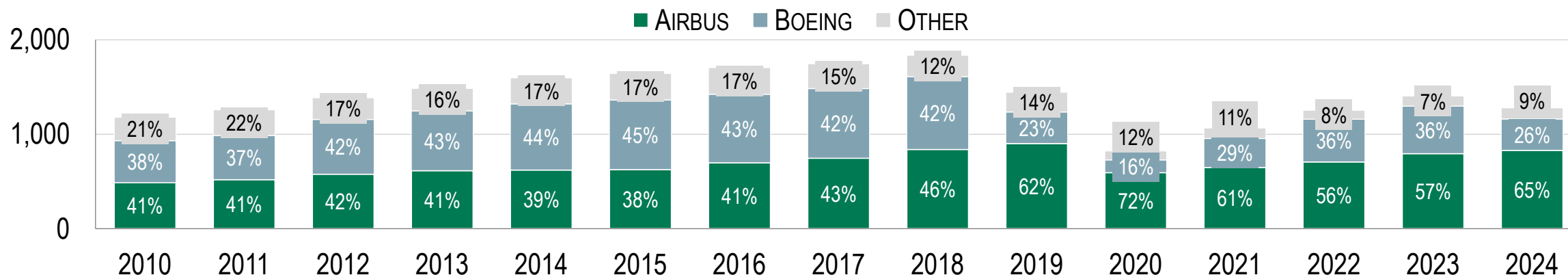
2025 FLEET¹ IN-SERVICE

	as % of 2014
Narrowbody	138%
Widebody	123%
Regional Jet	115%
Turboprop	79%
Total	125%

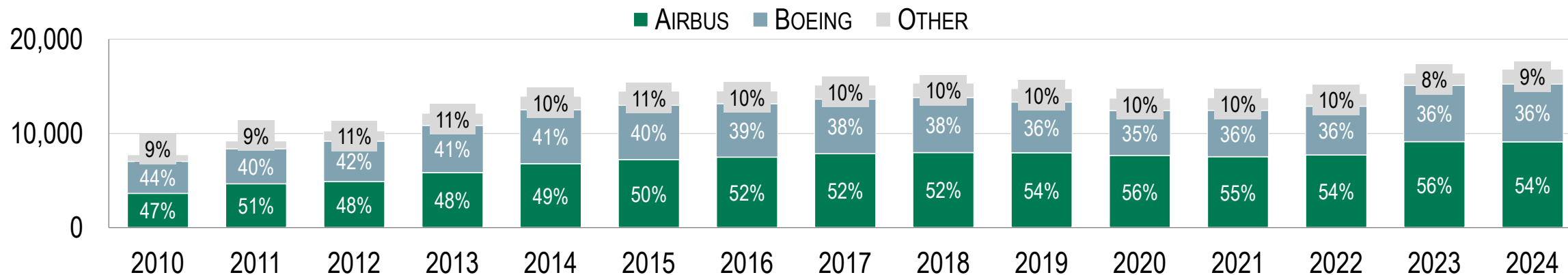
Note: [1] Aircraft include passenger and cargo variants
Source: CAPA

While annual deliveries remain below pre-COVID levels, recent years have seen an uptick; the global orderbook is the largest ever, with Airbus holding 54%

AIRCRAFT¹ DELIVERIES



ORDER BACKLOG



Note: [1] Aircraft data for passenger and cargo variants only
Source: CAPA

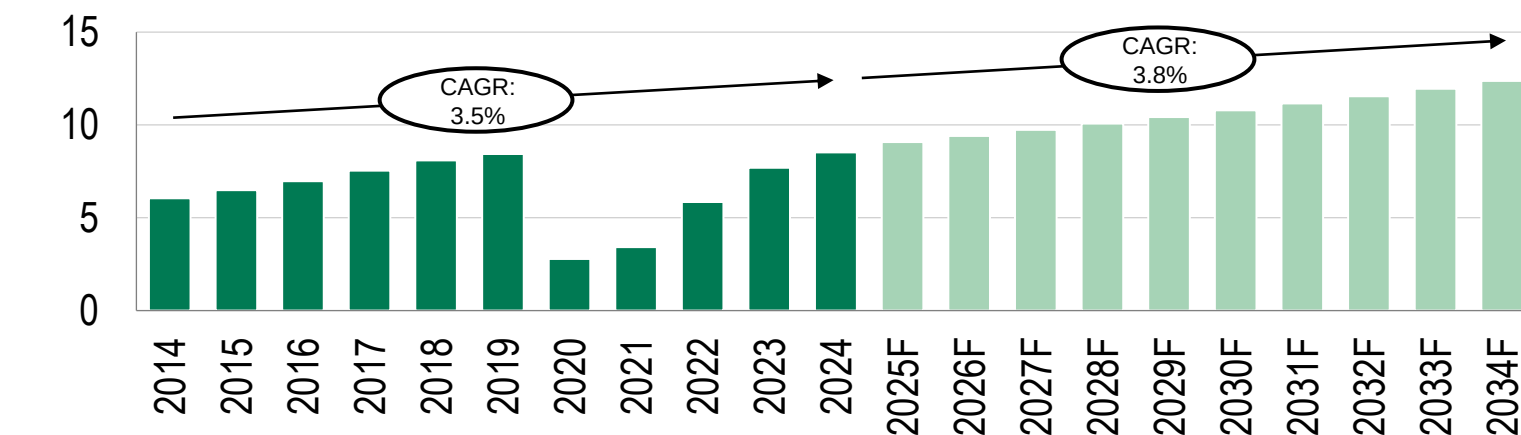
2. FLEET OUTLOOK

Alton anticipates that the historic multiplier between the growth rate of air traffic demand and GDP will return over the course of the next decade

GLOBAL GDP (CONSTANT 2017 US \$ TRILLION)



GLOBAL RPKs (TRILLIONS)

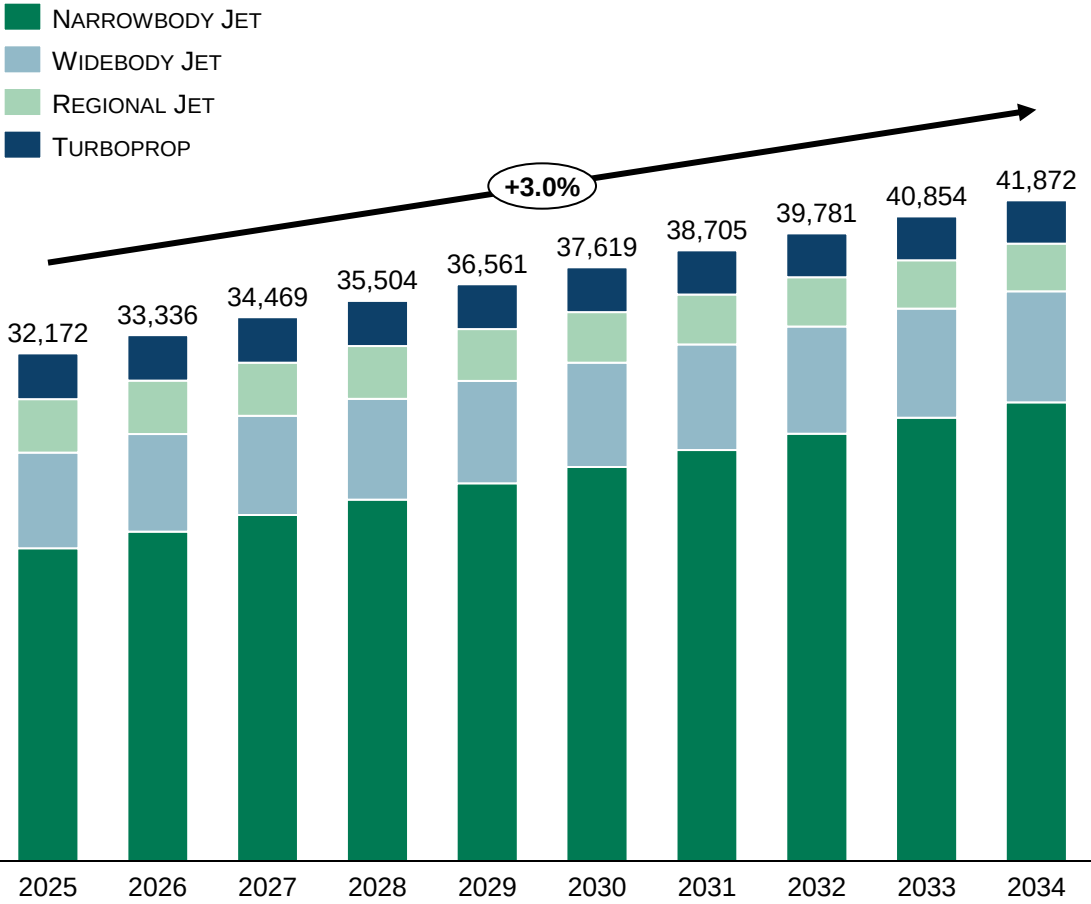


COMMENTARY

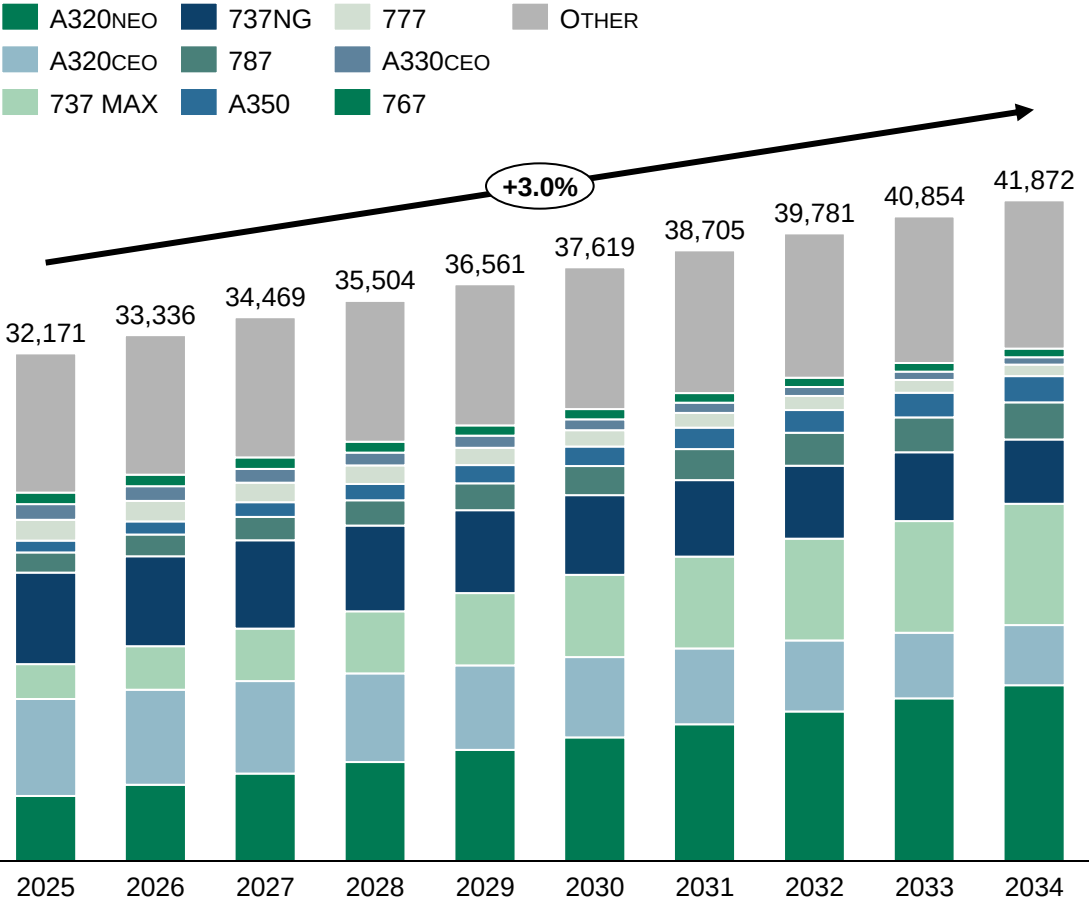
- Global air traffic and economic performance have historically been correlated, with a multiplier anywhere from 1.0x to 2.5x
- Longer term, real global GDP is expected to grow at 2.7% p.a. from 2024 to 2034, led by the Asia Pacific and other developing regions
- Alton's forecast for air traffic demand growth calls for nearly 4% p.a. growth over the next decade off the recovered 2024 baseline
- The 2034 market is therefore expected to be 45% larger than it is today

As air traffic demand grows with economic expansion, Alton forecasts the global fleet of in-service aircraft to grow to ca. 42,000 by 2034

IN-SERVICE FLEET FORECAST BY TYPE

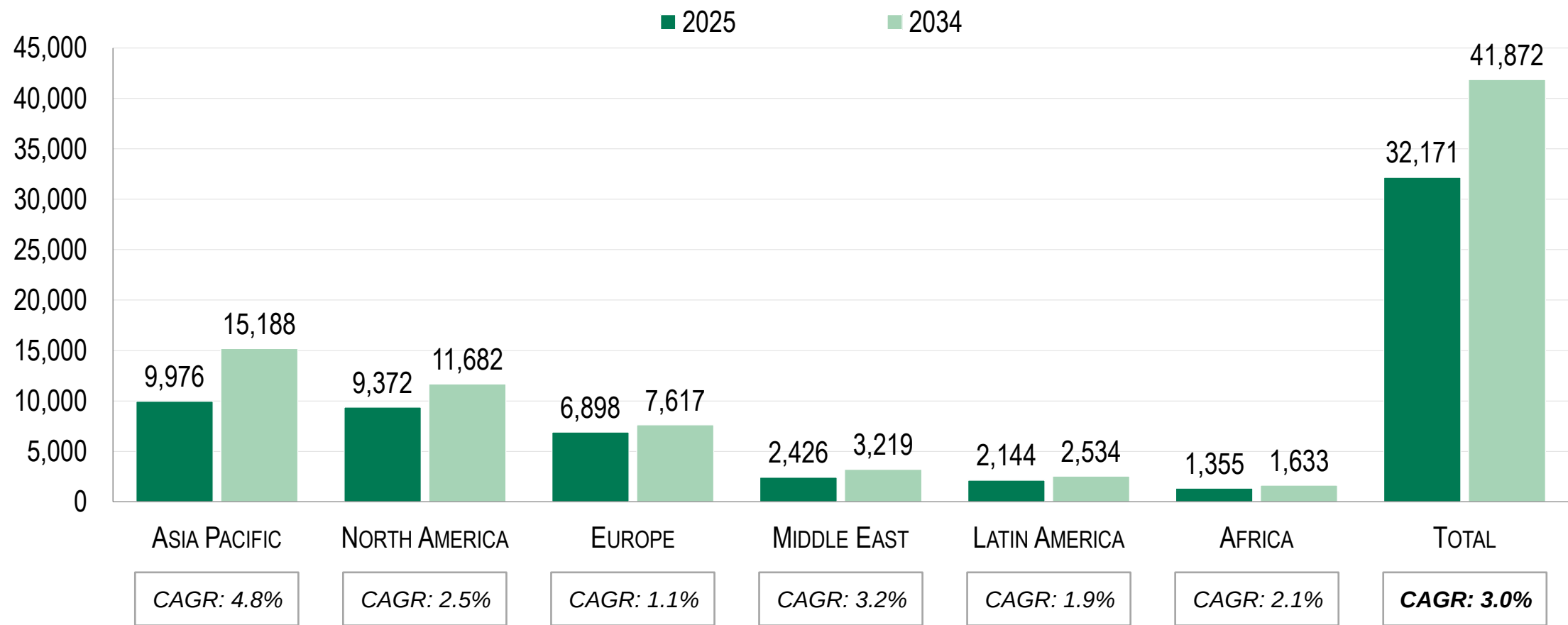


IN-SERVICE FLEET FORECAST BY MODEL FAMILY



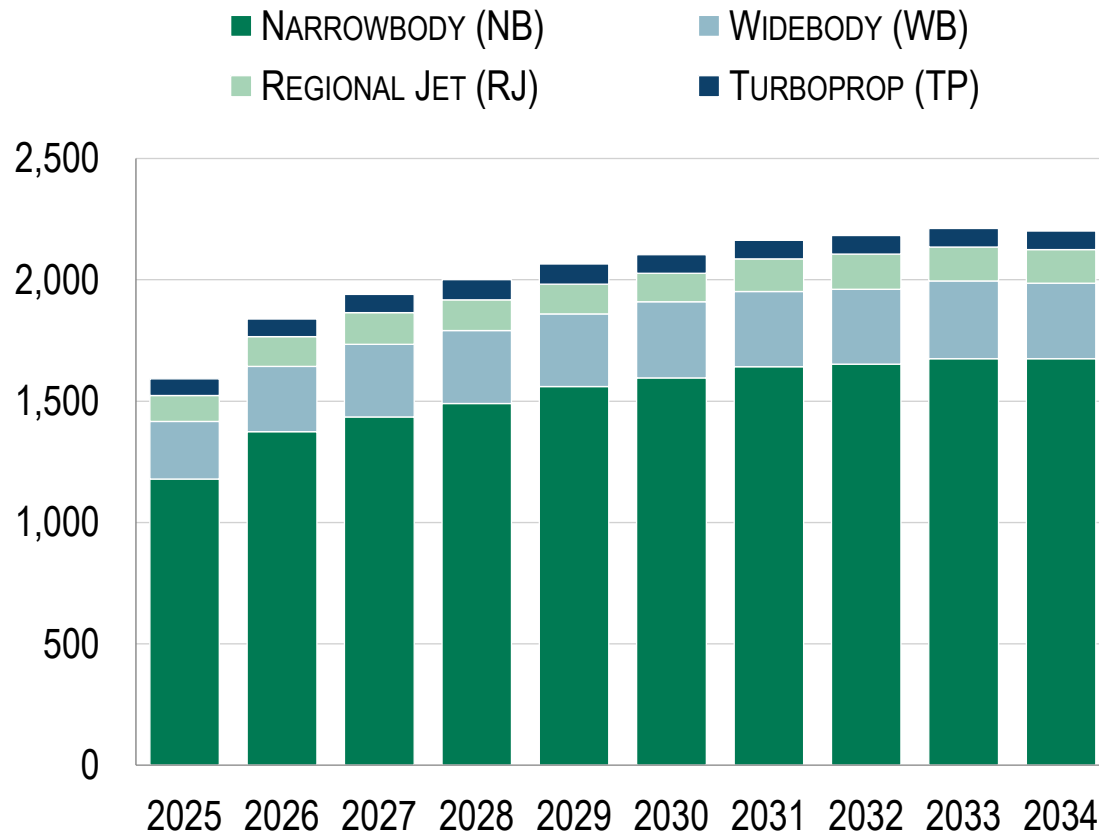
By region, Asia Pacific will continue to have the largest in-service fleet globally, while seeing some of the highest growth over the coming decade

IN-SERVICE FLEET FORECAST BY REGION

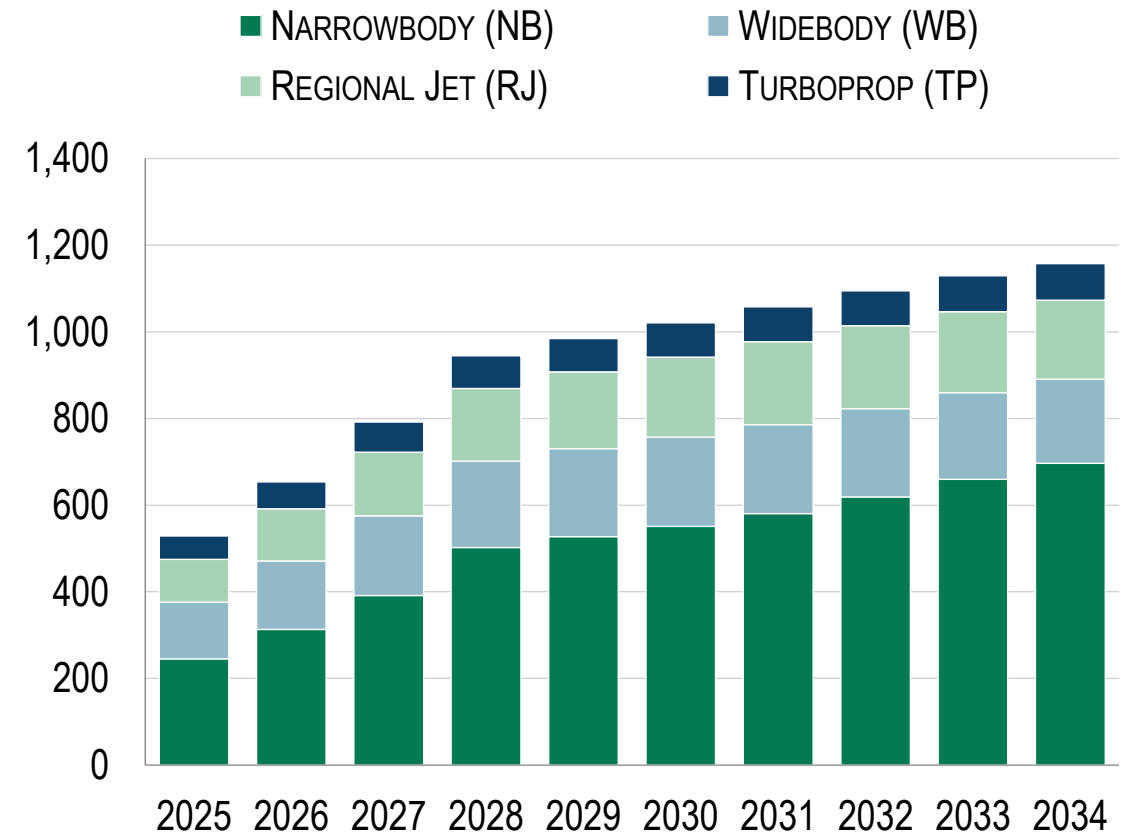


Alton expects deliveries to ramp up in the near-term as OEMs overcome recent challenges; retirements will increase as deliveries increase

ANNUAL DELIVERIES BY AIRCRAFT TYPE



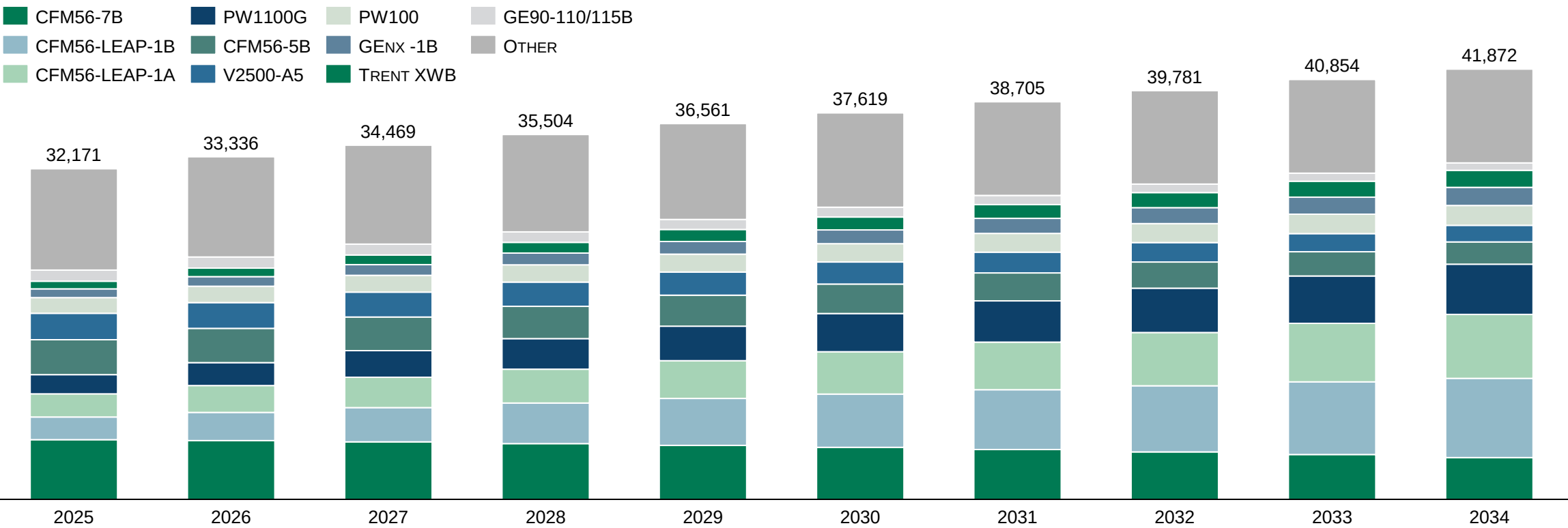
ANNUAL RETIREMENTS BY AIRCRAFT TYPE



A. ENGINE FLEET OUTLOOK

As the global fleet shifts towards new-generation aircraft, the engine dynamics will follow the same pattern (growth in LEAP, GTF, etc.)

IN-SERVICE FLEET¹ BY ENGINE TYPE

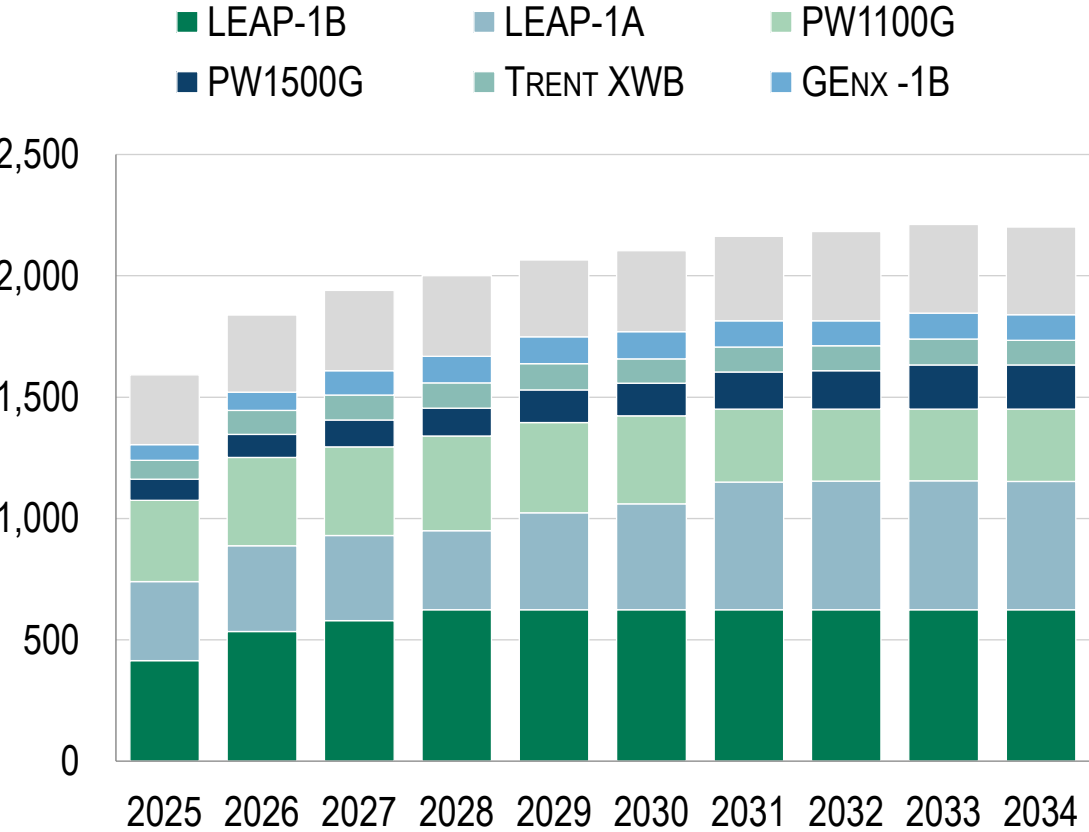


Although the fleet will shift focus towards new-generation engine models over the coming decade, current-generation technologies (CFM56-7B, -5B, V2500-A5) will remain a sizeable market throughout this period

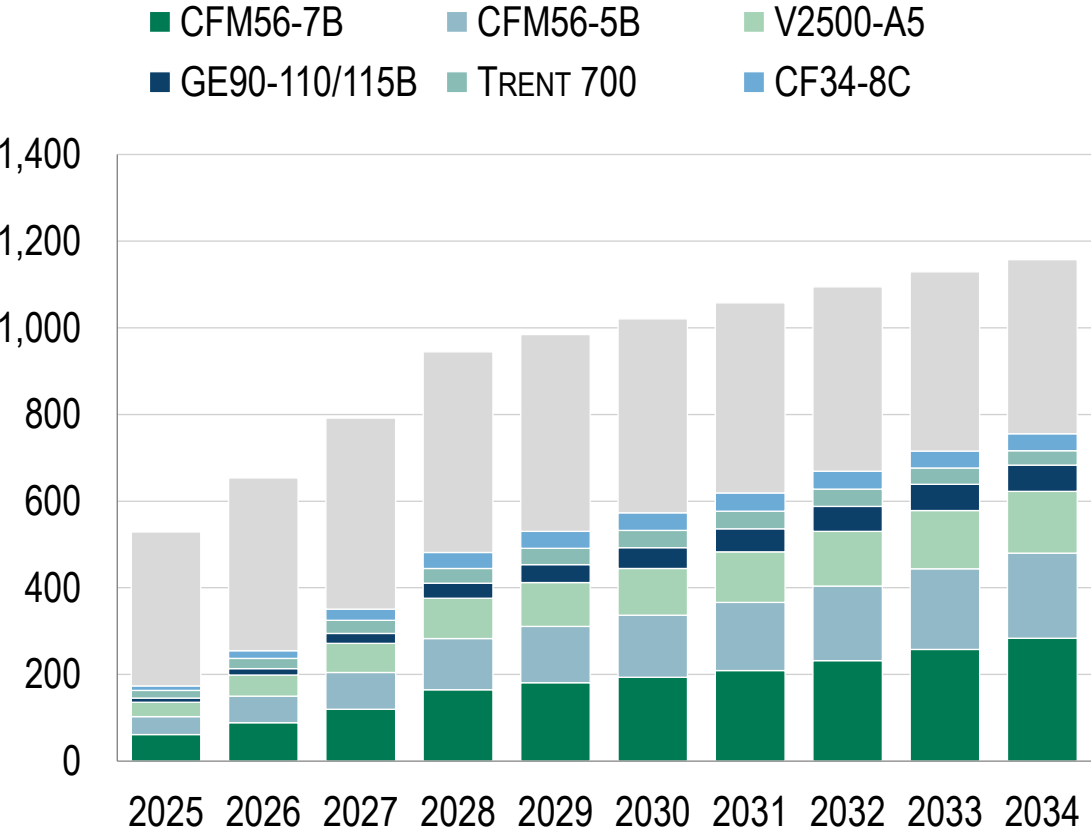
Note: [1] Fleet figures are representative of aircraft count, and not engine count
Source: Alton

A significant portion of deliveries over the coming decade will be for LEAP and GTF engines; retirements are fragmented, with CFM-56 engines the largest

ANNUAL DELIVERIES¹ BY ENGINE TYPE



ANNUAL RETIREMENTS¹ BY ENGINE TYPE



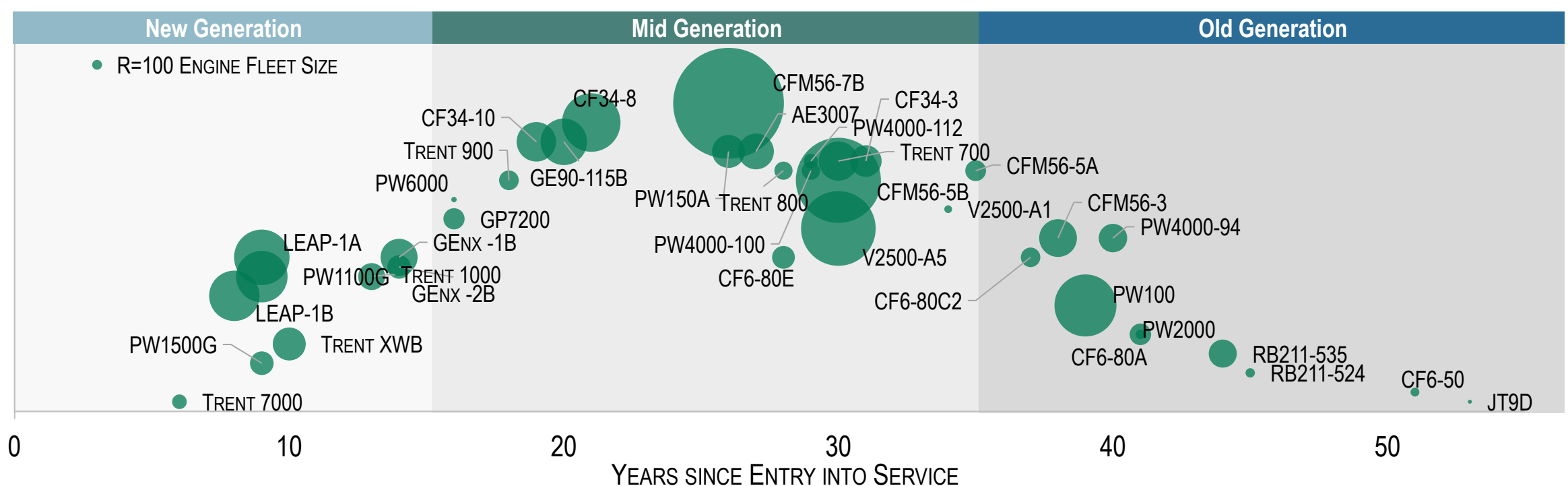
Note: [1] Fleet figures are representative of aircraft count, and not engine count
Source: Alton

3. ENGINE MARKET DYNAMICS

The background of the slide features a series of overlapping triangles in two shades of green: a darker teal and a lighter, semi-transparent green. These triangles are arranged in a way that creates a sense of depth and movement, with some pointing upwards and others downwards, forming a complex geometric pattern.

Engine market dynamics are influenced by position within program life cycle; leasing opportunities exist in each segment with different risks and returns

ENGINE PROGRAM BY ENTRY INTO SERVICE AND INSTALLED BASE



- New technology engines like the LEAP-1A, LEAP-1B, and PW1100G offer significant fuel burn advantages and are in demand on newer aircraft platforms; the initial promise of lower maintenance costs appears elusive for most
- The CFM56-5B, CFM56-7B, and V2500-A5 constitute the largest engine markets in the mid-generation segment

Among the leading engine lessors globally are Pratt & Whitney, AerCap, Shannon Engine Services, ELFC, and Rolls-Royce & Partners Finance

SELECTED¹ LEADING ENGINE LESSORS

 Pratt & Whitney An RTX Business		 Fly Certain		 Rolls-Royce Rolls-Royce & Partners Finance
Pratt & Whitney Engine Leasing (“PWEL”)	AerCap (excluding SES)	Shannon Engine Services (“SES”)	Engine Lease Finance Corporation (“ELF”)	Rolls-Royce & Partners Finance (“RRPF”)
- Commonly referred to as “PWEL”, Pratt & Whitney Engine Leasing is the global leader in engine leasing - Alton estimates that PWEL maintains a pool of over 1,000 engines, globally positioned for fast and agile distribution to clients - PWEL offers both short-term and long-term engine leasing, as well as access pooling, sale / lease-back, asset trading and more	- Ireland-based AerCap is the largest commercial aircraft lessor globally, and its engine leasing business has over 150 customers across 60 countries - AerCap Engines offers short-term leasing, operating leases, sale / lease-back, exchange and substitution, asset management, and marketing services - Alton estimates AerCap to have a portfolio of ca. 600-700 engines	- Shannon Engine Services is a joint venture between AerCap and Safran and specializes in providing spare engine lease solutions to CFM56 and LEAP operators - Alton estimates that SES has a portfolio of ca. 500 engines - As a part of the GECAS – AerCap merger announced in March 2021, AerCap acquired GE’s stake in SES	- ELFC is a major spare engine financing and leasing company, headquartered in Shannon, Ireland and is a group company of Mitsubishi UFJ Lease & Finance Company Limited - Alton estimates ELFC to have ca. 440 engines - In 2023, ELFC acquired 100% of INAV LLC., a Chicago-based engine parts and components company, having first acquired a partial stake in 2017	- RRPF Engine Leasing was the first manufacturer-affiliated engine leasing company, established in 1989 as a subsidiary of Rolls Royce Holdings plc to help finance spare engines for airlines - Alton estimates that RRPF has ca. 400 engines, including the the largest portfolio of Rolls Royce and V2500-A5 engines

Note: [1] Profiled lessors are only a select few of global players; examples of other leading engine leasing providers include WLFC, FTAI, SAEL, MTU, Regional One, TEAM, and more

Source: Alton; Pratt & Whitney; AerCap; Shannon Engine Services; Engine Lease Finance; Rolls-Royce & Partners Finance

In recent years, several large transactions have occurred that have impacted the global engine leasing space

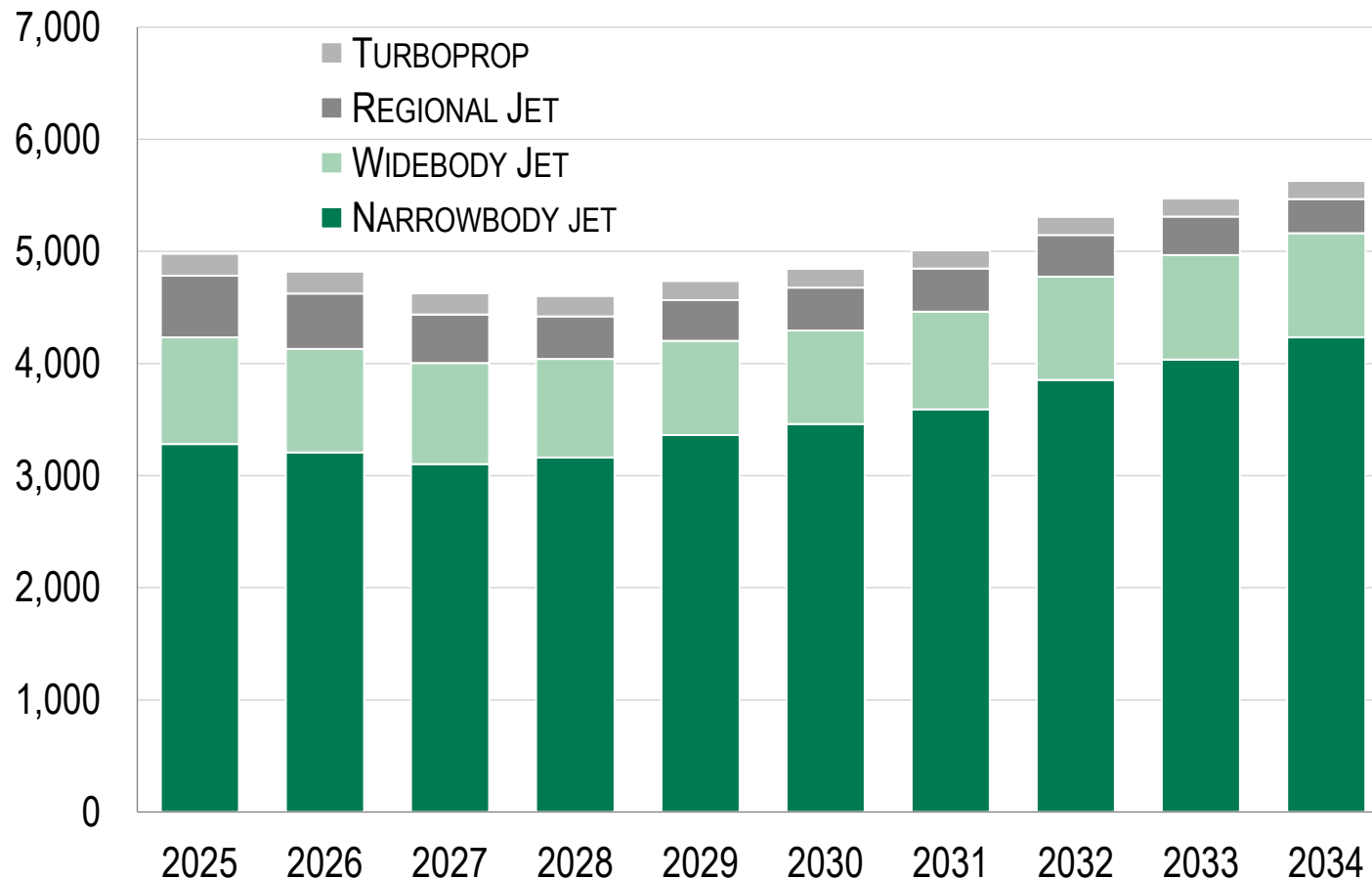
SELECTED¹ RECENT INVESTMENTS IN ENGINE LEASING

Involved Parties	Date	Amount	Commentary
 	March 2025	Undisclosed; BVJ will acquire up to \$150 million in engine assets in its initial phase	In March 2025, BeauTech Power Systems LLC and JALUX Inc. announced BVJ Engine Holdings LLC, a 50/50 joint venture based in Dallas, Texas, to acquire and lease IAE V2500-A5 and Pratt & Whitney GTF PW1100G engines
 	September 2024	\$170 Million	In September 2024, FTAI Aviation acquired Lockheed Martin Commercial Engine Solutions from for \$170 million, enabling FTAI to enhance its Maintenance, Repair, and Exchange (MRE) business
 	May 2023	Undisclosed	In May 2023, ELFC announced the full acquisition of US-based INAV LLC, a specialist in the aircraft engine parts and components space
 	October 2019	Undisclosed	In 2019, private equity firm CataCap acquired a majority stake in AerFin; AerFin focuses on the end-of-life segment of the market for both aircraft and engines, and actively purchases, leases, and trades all major commercial aircraft and engines

Note: [1] Listed investments are not exhaustive of all recent transactions, and are rather illustrative of market developments
Source: Alton; Public industry sources

Spare engine demand, driven by engine maintenance events, is expected to grow significantly in the coming decade

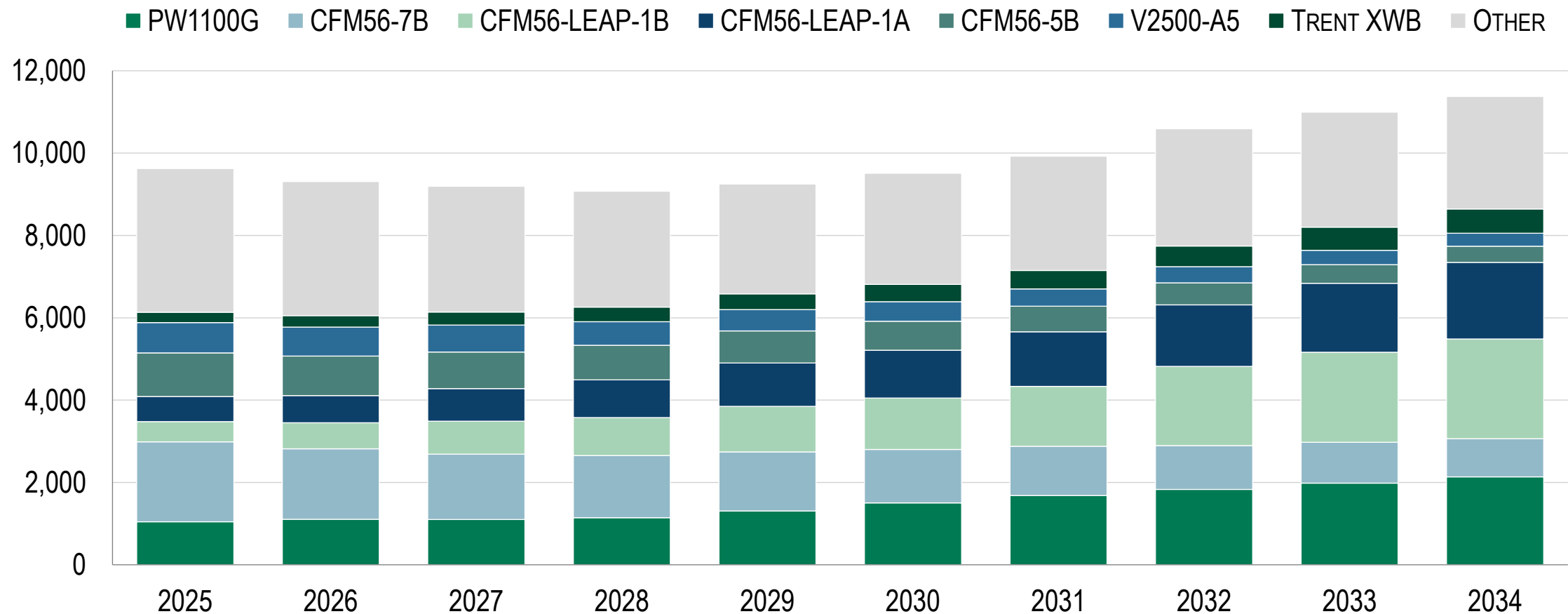
IMPLIED / THEORETICAL LONG-TERM SPARE ENGINE DEMAND FORECAST



- As we predict continued aircraft fleet growth, we similarly expect demand for spare engines to grow over the course of the next decade
- Spare engine demand is a function of engine utilization, time on wing, and shop visit turn time
- Because of various inefficiencies, total supply usually exceeds implied / long-term theoretical demand
- Growth in demanded spare engines expected to principally come from the narrowbody market segment
- The widebody spare engine market segment in aggregate is expected to remain similar in size, while the regional market declines

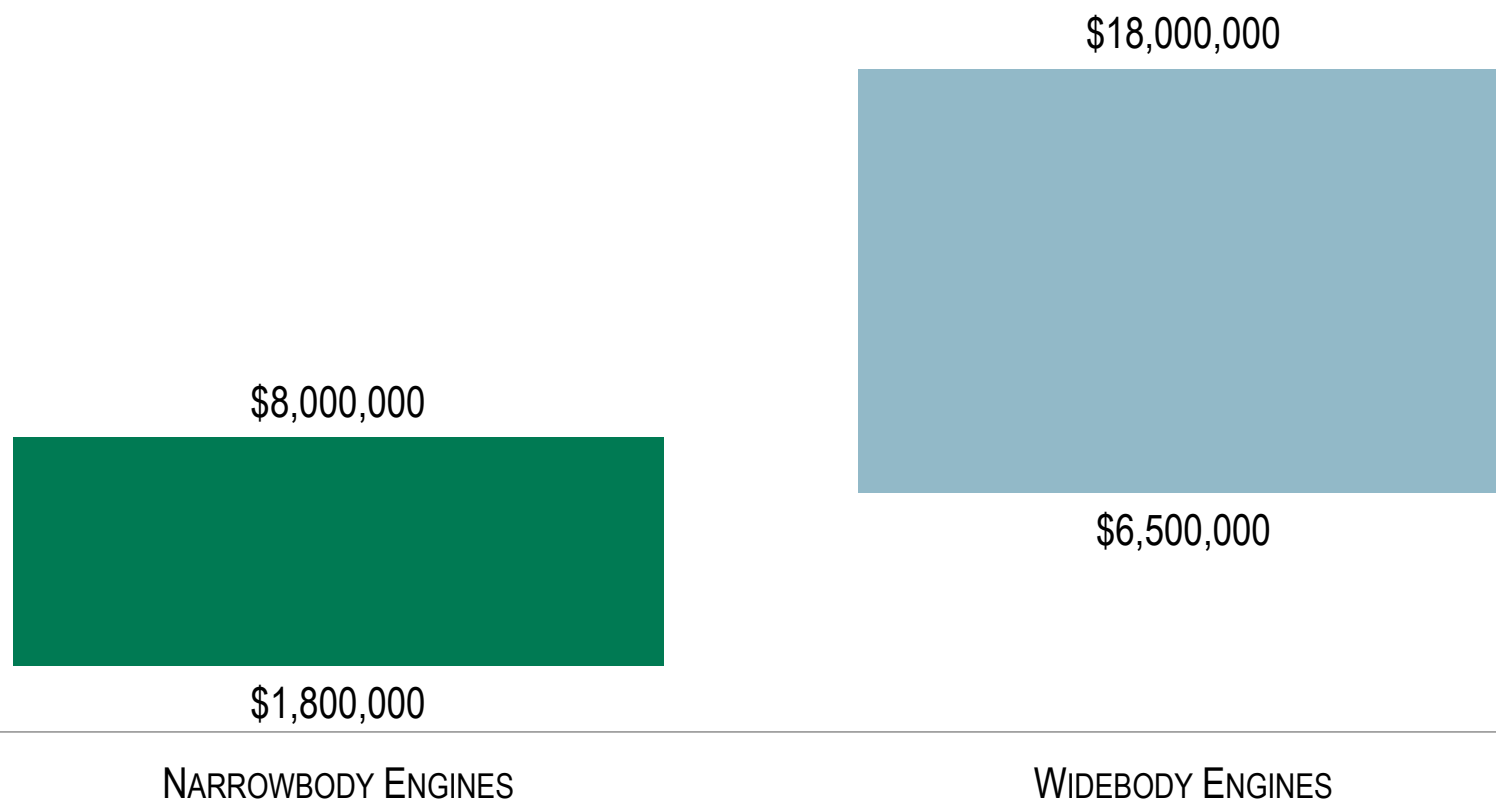
The engine performance restoration / shop visit market will shift towards LEAP and GTF engines over the coming decade

ENGINE PR SHOP VISITS BY ENGINE TYPE



The cost of a performance restoration event depends on many factors, but narrowbody engines typically cost \$1.8M - \$8.0M, with WB at \$6.5M - \$18.0M

INDICATIVE RANGE OF COSTS¹ FOR ENGINE PR EVENTS



- Alton sees engine PR events typically costing \$1.8M-\$8.0M for engines on narrowbody aircraft, and \$6.5M-\$18.0M for engines on widebodies
- The costs do not include LLP replacement; recently, year-on-year LLP price escalation has increased compared to historical levels (historically 4-8%, recently 8+%)

Note: [1] Values are approximate ranges for performance restoration events for engines Alton has analyzed; actual values in the market may vary due to circumstantial factors

Source: Alton

New generation spare engine demand is robust and anticipated to grow strongly; limited supply portends well for value retention, but the market is competitive

NEW GENERATION

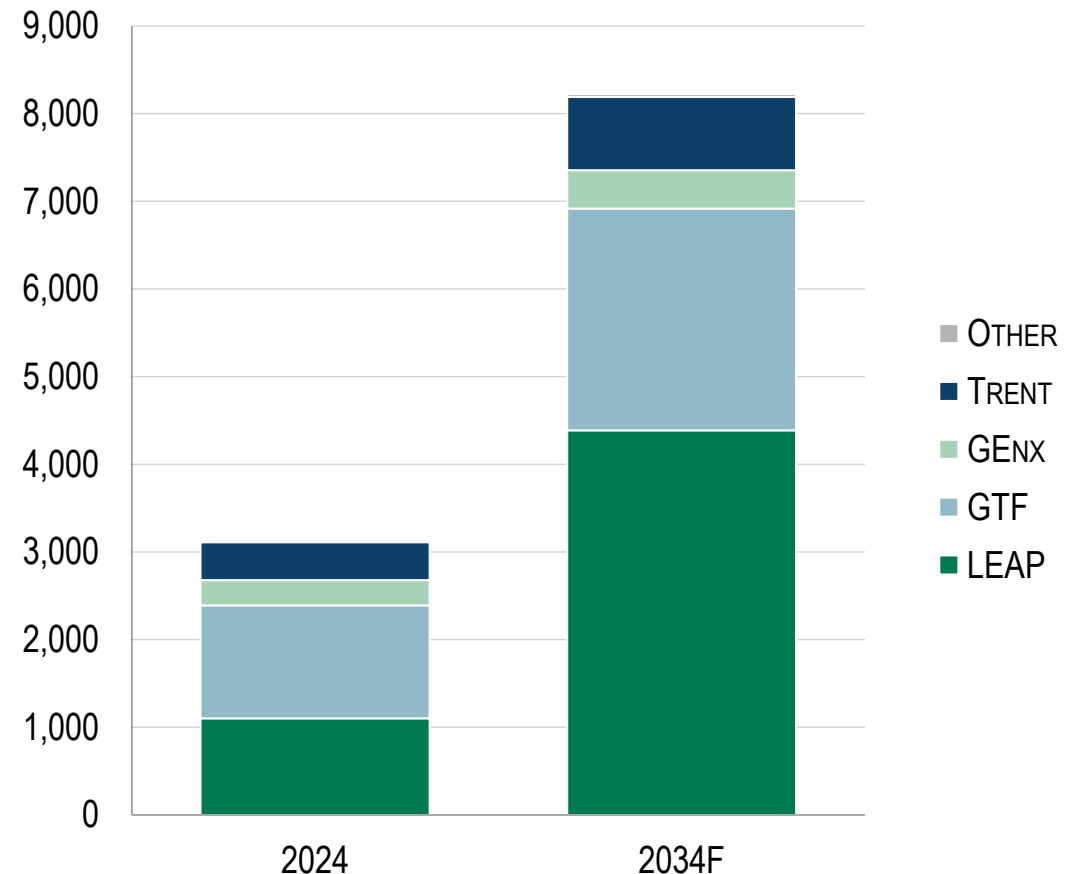
CURRENT MARKET DYNAMICS

- Near-term shop visits due to lower durability, airworthiness directives, etc.; turn-times extended
- Medium- and long-term demand robust; shop visits will more than triple in coming decade
- OEMs are single source of spare engine supply
- Competing demands being balanced by engine OEMs to increase spare engines in the market vs. supporting new production

VALUE / LEASE RATE DYNAMICS

- With strong demand and limited single supply source, values are heavily influenced by rising OEM list prices
- Long-term lease rates in sale-leasebacks increasing due delivery prices and higher interest rates; low cost of capital essential to compete, with Japanese tax equity now active
- Increased airline demand for longer lease terms to ensure supply from limited number of rental market engines available
- Finance lease solutions increasingly explored by airlines

FUTURE ANNUAL ENGINE SHOP VISIT VOLUME



Mid-generation spare engine demand is undergoing a resurgence following several challenging COVID years

MID GENERATION

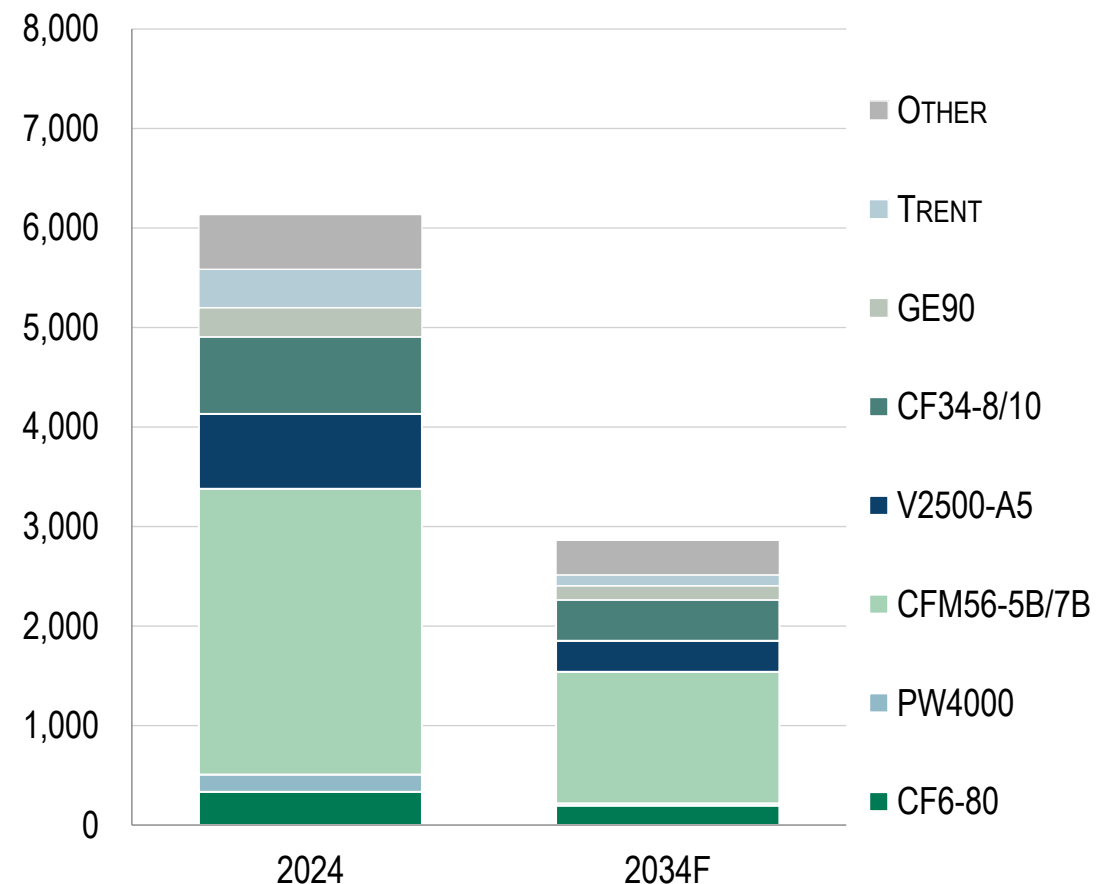
CURRENT MARKET DYNAMICS

- Resurgence in demand, moderate production rates, and durability challenges for new technology is sustaining mid-gen engine demand
- Engine supply is moderate given previous lower MRO re-investment; significant activity now
- Alternative maintenance solution development (exchanges, PMA, etc.) given large market and increased parts pricing
- While expected to decline, overall market size will remain large on volume and value basis for many years to come
- Significant supply to come from retirements over next decade

VALUE / LEASE RATE DYNAMICS

- Supply/demand balance has driven lease rental rates to levels comparable to pre-COVID for many engine types, but less movement year-over-year for narrowbodies
- Reports of narrowbody engine trading prices increasing significantly, for both serviceable units and engine cores
- Increases in list prices are supporting values for USM, reserve rates, and end-of-lease payments – and therefore “metal” values
- Investor interest has returned

FUTURE ANNUAL ENGINE SHOP VISIT VOLUME



Key Takeaways

1

- Aviation industry has fully recovered from COVID pandemic
 - Air traffic demand has shown resilience through various cycles
 - Strong revenue recovery but inflationary costs too; profitability level restored
 - Constrained supply has been beneficial for wide array of industry participants
 - Macro risks always present such as GDP, pandemics, translation into air traffic demand (passenger/cargo), inflation, interest rates, fuel prices, geopolitical tensions, etc.

2

- Resurgent demand / limited supply for many new- and mid-generation assets
 - Demand for air travel continues to drive increasing aircraft demand
 - Aircraft manufacturer face production ramp up delays; engine manufacturer ADs
 - Pent-up demand from more limited engine shop visit volumes in recent years, together with longer shop visit turn times

3

- Replacement of current generation with new generation aircraft / engines well underway, but will take time
 - Increasing number of new generation in-service aircraft fleet, but hampered by supply chain and engine durability
 - Large installed base of current technology engines entering mature phase; declining in-service fleet necessitates market participants make informed decisions

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Thank You.

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