



Aviation Week Engine Leasing, Trading & Finance Europe 5-6 June 2024

Richard Hough
President & CEO

About us

Who we are

Headquartered in Shannon, Ireland with offices in Boston, London, Singapore and Hong Kong, **elfc** is the world's leading engine financing and leasing company.

elfc is a group company of Mitsubishi HC Capital Inc. Mitsubishi HC Capital Inc. is a renowned global leasing company based in Japan and publicly listed on the Tokyo and Nagoya stock Exchanges.

This gives **elfc** the financing power and stability to satisfy the long-term financing needs of airlines, operators, OEMs and MROs and to meet the commercial challenges presented by today's dynamic world markets.

With this access to extensive funding at favourable rates, we can ensure low-cost flexible financing for the commercial aviation industry. **elfc's** customer base includes some of the world's most established airlines, the newest start-ups and many of the seasoned LCC's around the world. Our client base also includes OEMs, MROs and Aircraft Lessors.



Positive Start

Latest IATA forecast this week:-

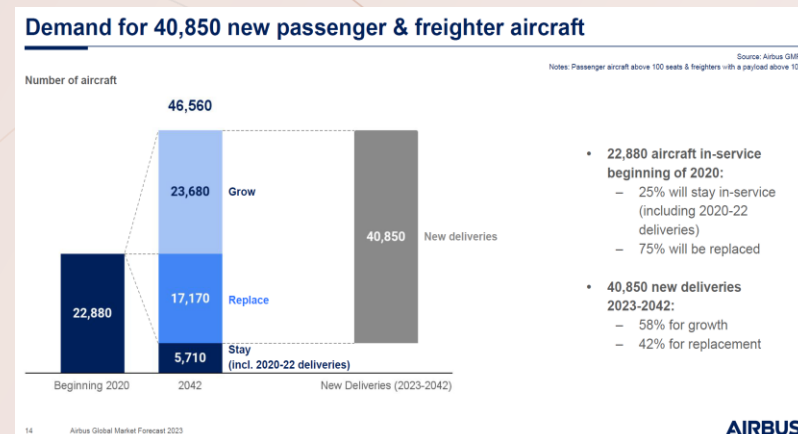
- ✈ Global airline profits forecasted to increase by 11.3% to \$30.5bn in 2024
 - Would represent 4th most profitable year on record (behind 2015-2017)
- ✈ Forecasted increase in both ASK (11.2%) and RPK (11.6%) over 2023 with 4,964 million passengers expected to travel on 38.7 million flights.



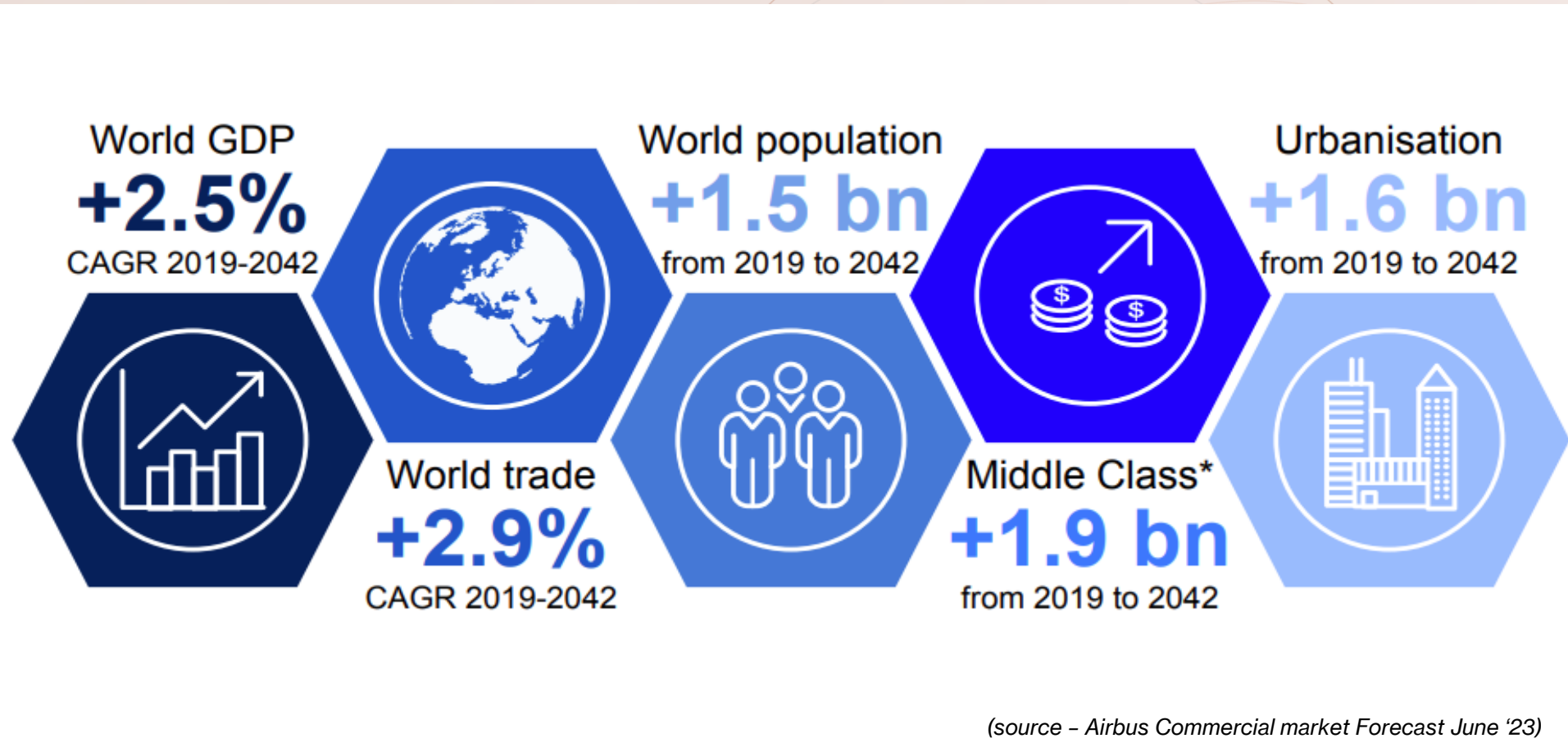
Staying Positive - Industry Growth

➔ Prediction of between 40,850 (Airbus) and 42,595 (Boeing) new aircraft over the next 20 years

➔ Both estimate ~6,000 of current fleet (2023) will still be in service in 2042.

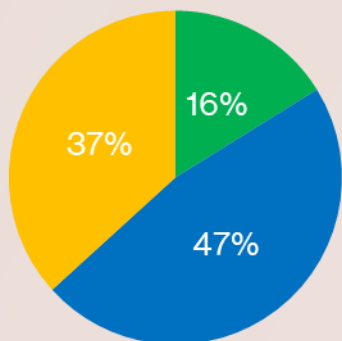


Context for long term growth



Future Market Analysis – Spare Engines

Latest tech. engines ownership profile in 2024



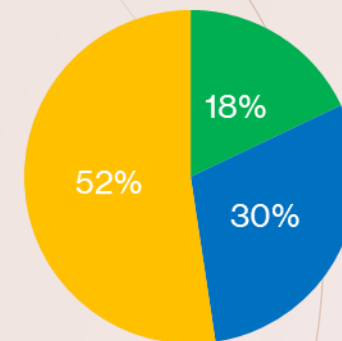
■ Ind. Lessors ■ OEM Lessors ■ Airline

~1,900 spare engines

~3,400 latest technology* spare engines to be delivered in next 10 years

\$84.8B funding required

Latest tech. engines ownership profile in 2033



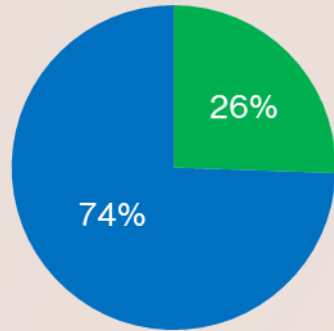
■ Ind. Lessors ■ OEM Lessors ■ Airline

~5,300 spare engines

*Latest tech. engines incl. LEAP-1B, LEAP-1A, PW1100G, Genx-1B and Trent XWB

Future Market Analysis – Leased Spares

Latest tech. leased engines in 2024



■ Ind. Lessors ■ OEM Lessors

~1,200 spare engines

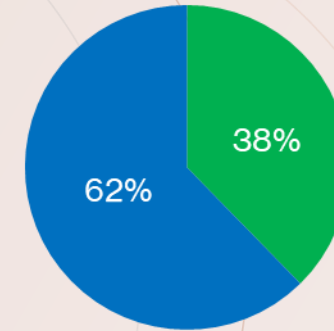
~800 spare engines to be financed by sale and leaseback

\$18.6B SLB investment opp.

~500 spare engines to be financed by OEM

\$13.0B investment (OEM investment will be frontloaded)

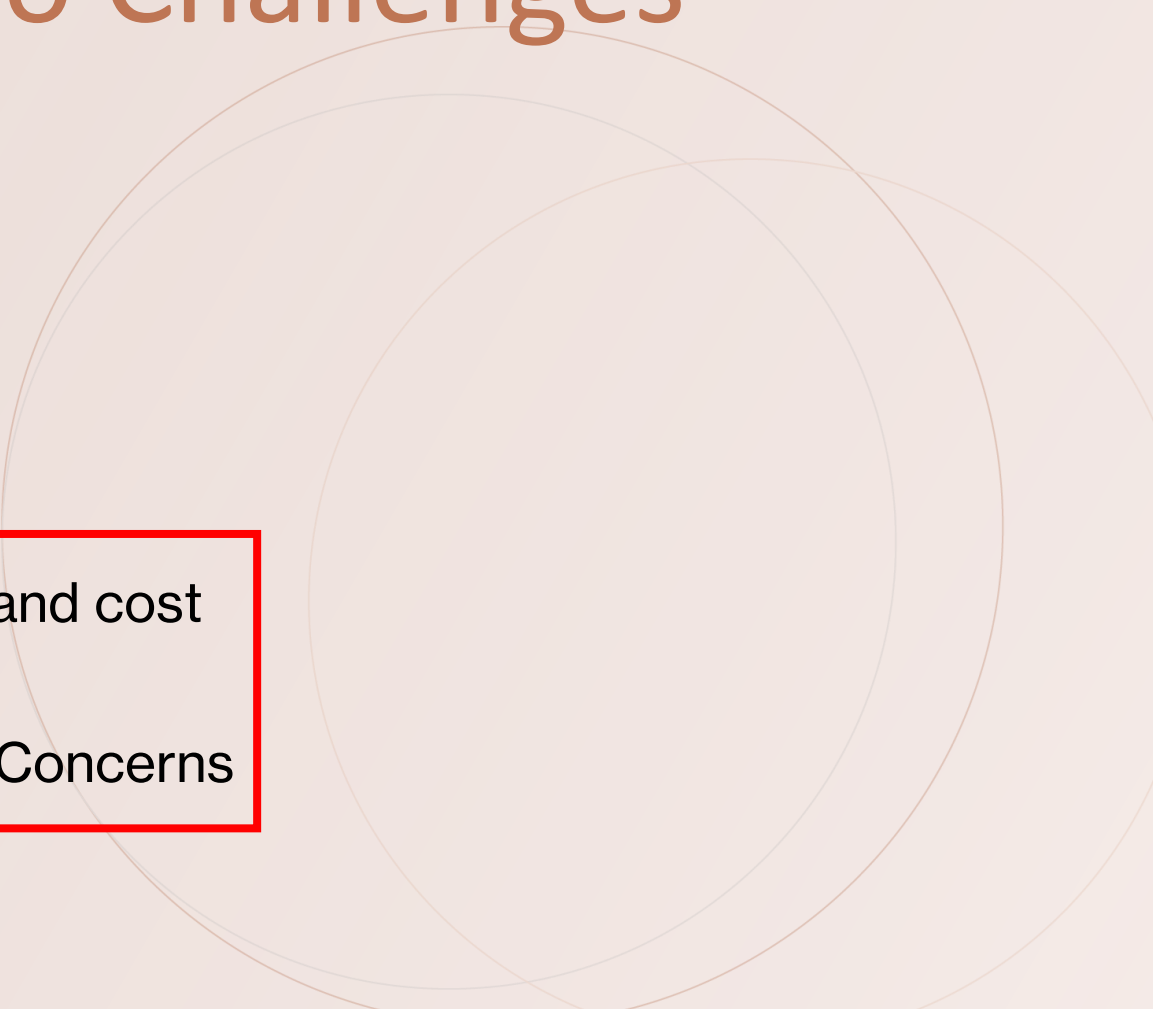
Latest tech. leased engines in 2033



■ Ind. Lessors ■ OEM Lessors

~2,500 spare engines

Macro Challenges

A Venn diagram consisting of three overlapping circles in a triangular arrangement. The circles are light brown and have thin outlines. They overlap in the center and at the intersections of two circles each.

- Black Swan Events
- Geopolitical Instability
- Energy Concerns – availability and cost
- Environmental & Sustainability Concerns

Environment & Sustainability

Why Aviation will continue to have strong long term growth.....

- ✈ Drives the development of the modern world
- ✈ Connects remote communities and major urban centres
- ✈ Carries ~1% of world trade by volume but 35% by value
- ✈ Transport of perishable and urgent supplies
- ✈ Ref. IATA – estimated 4.5 billion pax were carried by the world's airlines in 2023 (4.54bn in 2019), 4.9bn forecasted for 2024
- ✈ ~60% of all tourists travel to their destinations by air
- ✈ ~80% of aviation generated CO2 emissions come from flights >1,500 km – for which there is currently no practical alternative mode of transport

Environment & Sustainability

- Aviation produces:-
 - ~2.5% of global CO2 emissions
 - ~12% of CO2 emissions from all forms of transport
- Under all scenarios, global warming is expected to exceed 1.5°C by 2035
(McKinsey Global Energy Perspective 2023)
- Near Time Bias.
- No idea what the outcome of this will be.

- ✈️ Aviation expected to continue to grow @ 3-4% p.a. thru 2050.....
- ✈️ Electric powered aircraft limited in scale and range
- ✈️ Hydrogen possible – very much into future

“Ambition to develop the world’s first zero-emission commercial aircraft by 2035” - Airbus

- ✈️ Sustainable Aviation Fuel is the only show in town to reduce emissions for the next 20+ years.



SAF – Production Demand

➔ Net Zero target by 2050 heavily reliant on SAF (65%) – is this possible ?

	2024	2050
Commercial Aviation Fuel Demand	~298mt	538mt (Est.)*
Global Production of SAF	~1.5mt	
Required Global Production of SAF (65%)		350mt (Est.)*
Required CAGR of SAF Supply (2024-2050)		23.3%

* Assumes Traffic CAGR growth of 3.5% from 2024-2050 & 30% efficiency improvements over time period

SAF – Production Capacity

~\$250bn CAPEX required to build ~150 refineries required to produce 40 million tonnes of SAF annually by 2050 in EU (SkyNRG report 2023)

- ➔ Implies average SAF facility will cost \$1.67bn and produce 266,000 tonnes p.a.
- ➔ To produce 538mt globally (total aviation fuel demand in 2050)
 - ➔ 2,000 average size plants
 - ➔ Total cost of \$3,340bn => \$128.5bn investment p.a. for next 26 years.



16 February 2023

RIYADH, Saudi Arabia - Annual upstream oil and gas investment needs to rise by 28 percent to reach \$640 billion by 2030 to ensure adequate global supplies, according to a new report published

Near Term Operational Challenges (2022 Slide)

→ MRO Capacity Problems

- MRO Slots
- Manufacture of New Parts
- Repairs (Hot Section) & availability of USM

→ MRO Capability Problems

- Repair Development (loss of knowledge, OEM restrictions, complex technologies)

→ Spare Engine Availability

- Access to “Greentime” managed assets

→ Interest Rates

- Trading of fixed lease rate contracts

Spare Engine Market Imbalance

Number of Spare Engines Required:-

$$f(N, UTLN, TOW, TAT, C)$$

- ✈ Latest Technology issues with N, TOW and TAT
 - UTLN is the only stable element, forget about C for now !
- ✈ Post Production Technology issue is mainly with TAT
 - Limitations in Shop Capacity and Parts Supply Chain
 - Shop capacity has increased but surge in demand has been greater
 - Parts supply chain is a broader issue

Future MRO Supply Chain Talking Points

- We need more repair capability and capacity
- We need less OEM control
 - licencing shops to strip-build-test is not an open market
- We also need to recognize and respect OEM investment
- Is it a broken model ?
 - Potential alternative - free market to develop and the OEM gets a royalty.
- How repairable are latest technology parts ?
 - Highly complex designs, new materials and modern production processes.
- Where is the motivation ?
 - Parts price increases v unit cost of production v repair development costs

Competition Talking Points

- ✈ Engine leasing market still dominated by OEM's (PWEL & RRPF) and AerCap\SES
- ✈ Long standing independents (elfc & Willis Lease) remain strong
- ✈ Market expansion hasn't mirrored that of aircraft leasing:-
 - 2024 – Hanwha
 - 2013 – SAEL & MTU Maintenance Lease
 - 2011 – Beatech, FTAI & TEAM
 - 2010 – SANAD
- ✈ Some hybrid aircraft \engine lessors:-
 - 2021 – Aquila
 - 2016 – Setna iO
 - 2014 – TrueAero
- ✈ Some aircraft lessors have participated in engine lease, but primarily for ad-hoc reasons
- ✈ Given forecasted growth, will the market dynamic change ?
- ✈ What are the real barriers to entry ?

Other Talking Points

✈ Market Mixed Messages

China's Post-Pandemic Domestic Market Going From Strength To Strength

Overcapacity and price war push down Chinese carriers' fares

Ticket prices in China's civil aviation industry plunged in the off-peak season after the five-day Labor Day holiday ended May 5, YiCai Global reports. [Read More »](#)

✈ Records Digitalisation

SpeedNews

March 1, 2024

AVIATION SUPPLY CHAIN INTEGRITY COALITION was formed by Airbus, American Airlines, Boeing, Delta Air Lines, GE Aerospace, Safran, StandardAero and United Airlines to prevent introduction of unapproved parts into the supply chain.

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