



Global Market Forecast 2023

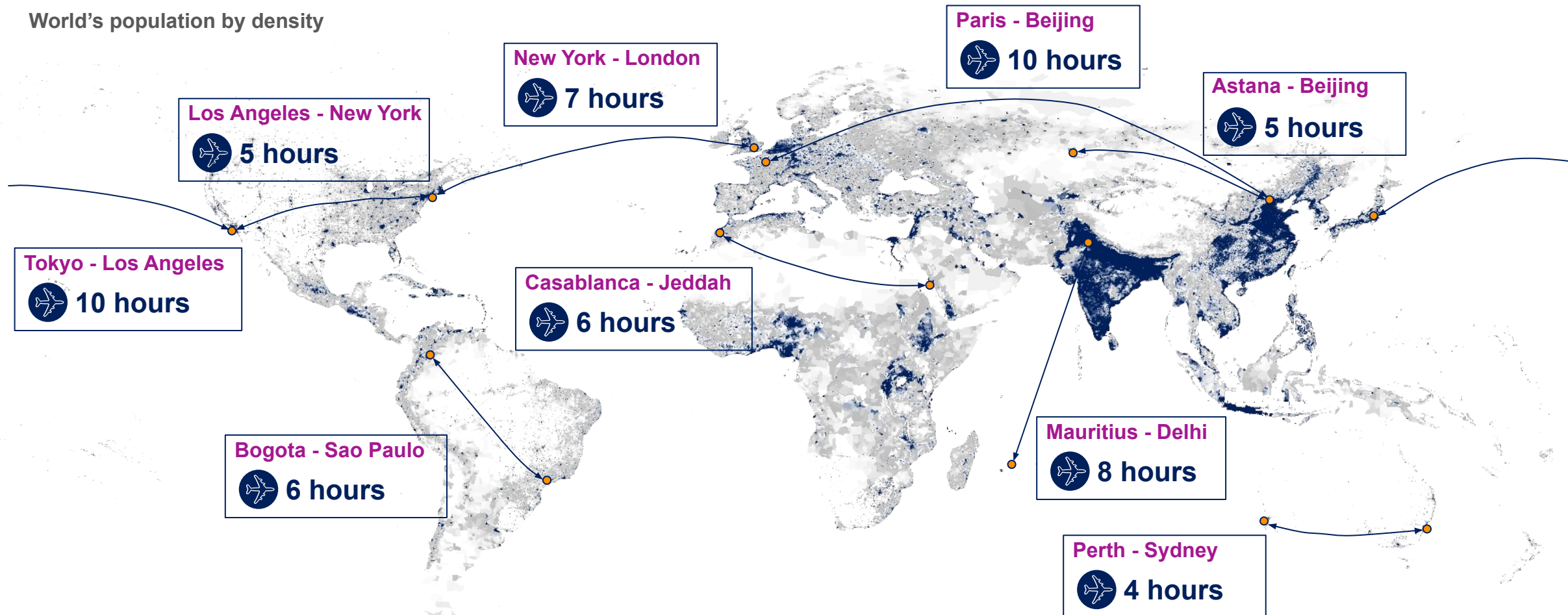
Toulouse - 13 June 2023

AIRBUS

Air transport brings the world's population centres together

Source: CIESIN, SEDAC, Airbus GMF

World's population by density



Air transport has given us simpler and faster connections

Source: BOAC Timetable 1957, Airbus GMF



1952
6 weeks trip



1957
5 days trip



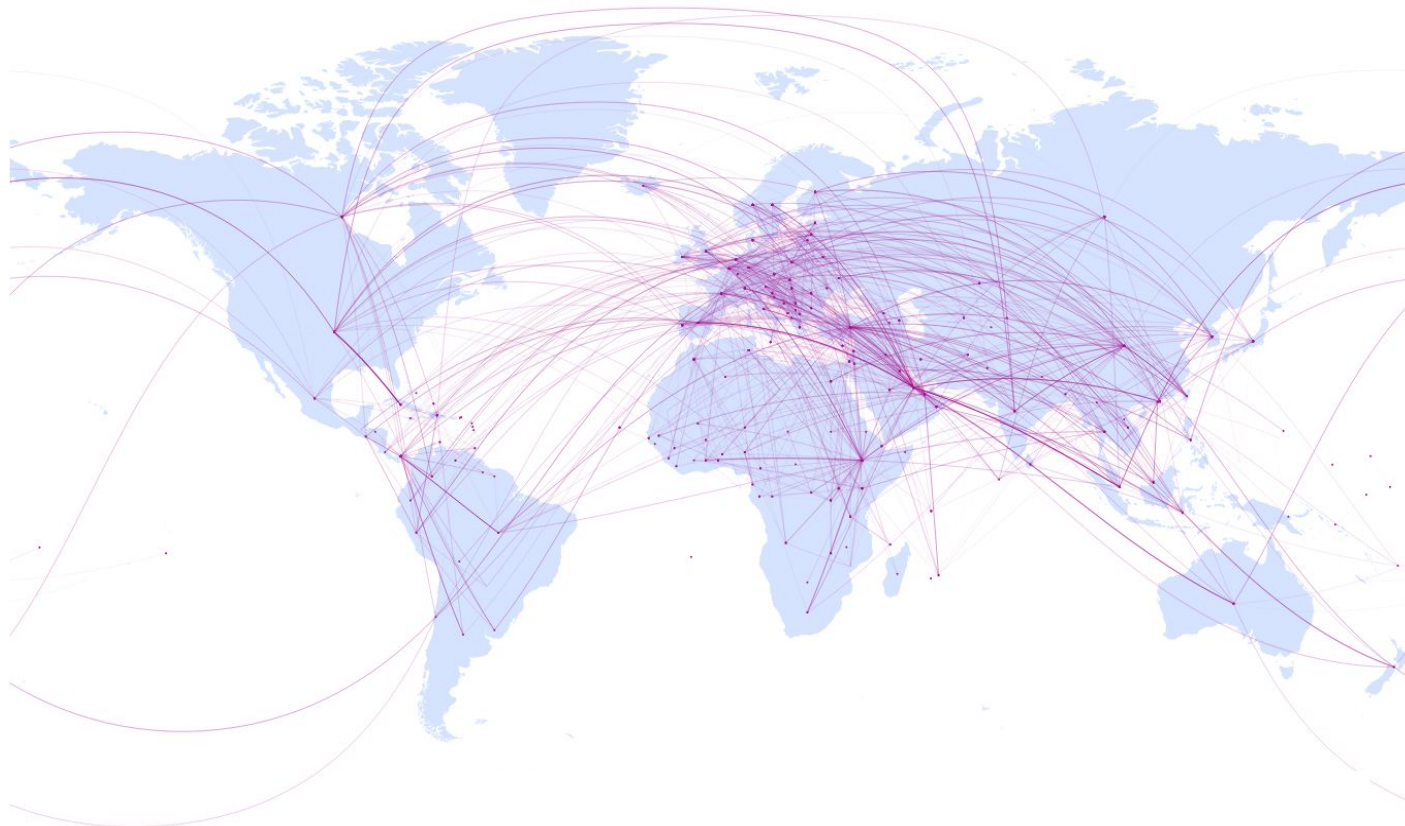
2025
~20 hours



Air transport connects more countries than ever, facilitating exchanges

Source: OAG (September data), Airbus GMF

New additional country pairs served by a non stop flight between 1999-2019



New country pairs that have been created between 1999-2019:

1,020 new **worldwide** country pairs (+33%)

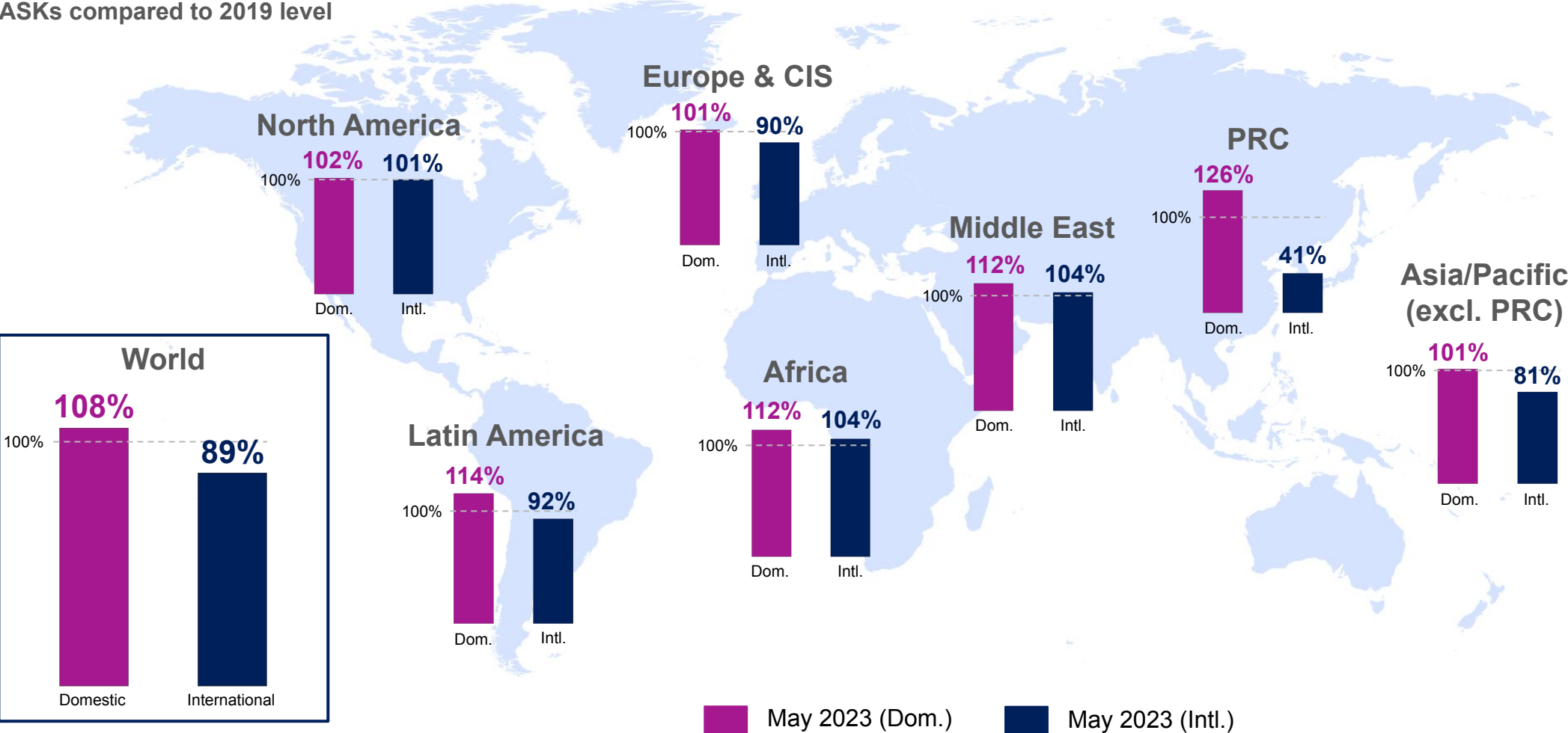
469 **intra-regional** (+30%)

551 **inter-continental** (+36%)

Post-Covid capacity has recovered quickly as restrictions were lifted

Source OAG, Airbus GMF

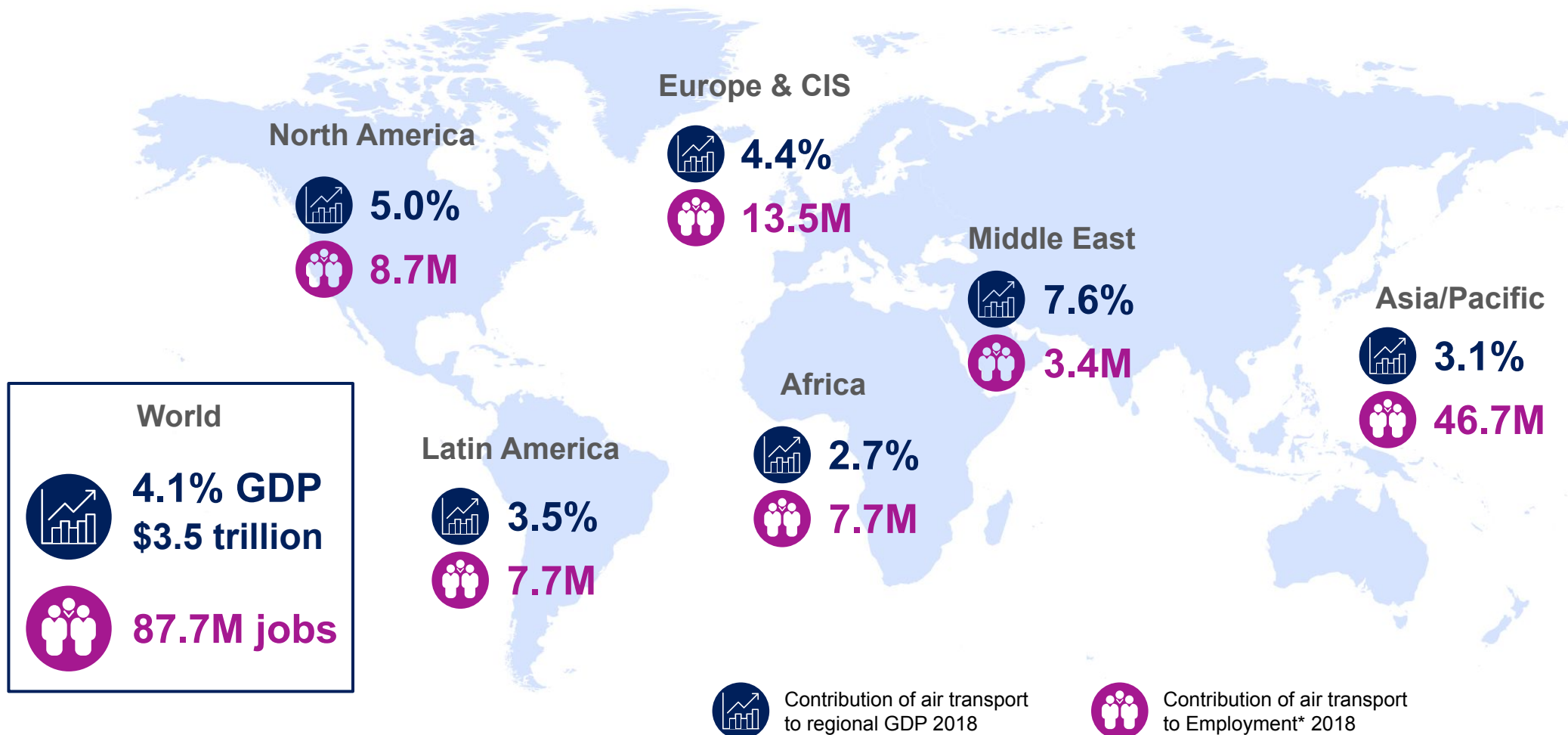
ASKs compared to 2019 level



Air transport is a major contributor to GDP and Employment

Source: ATAG's Aviation Benefits Beyond Borders, September 2020, Oxford Economics, Airbus GMF

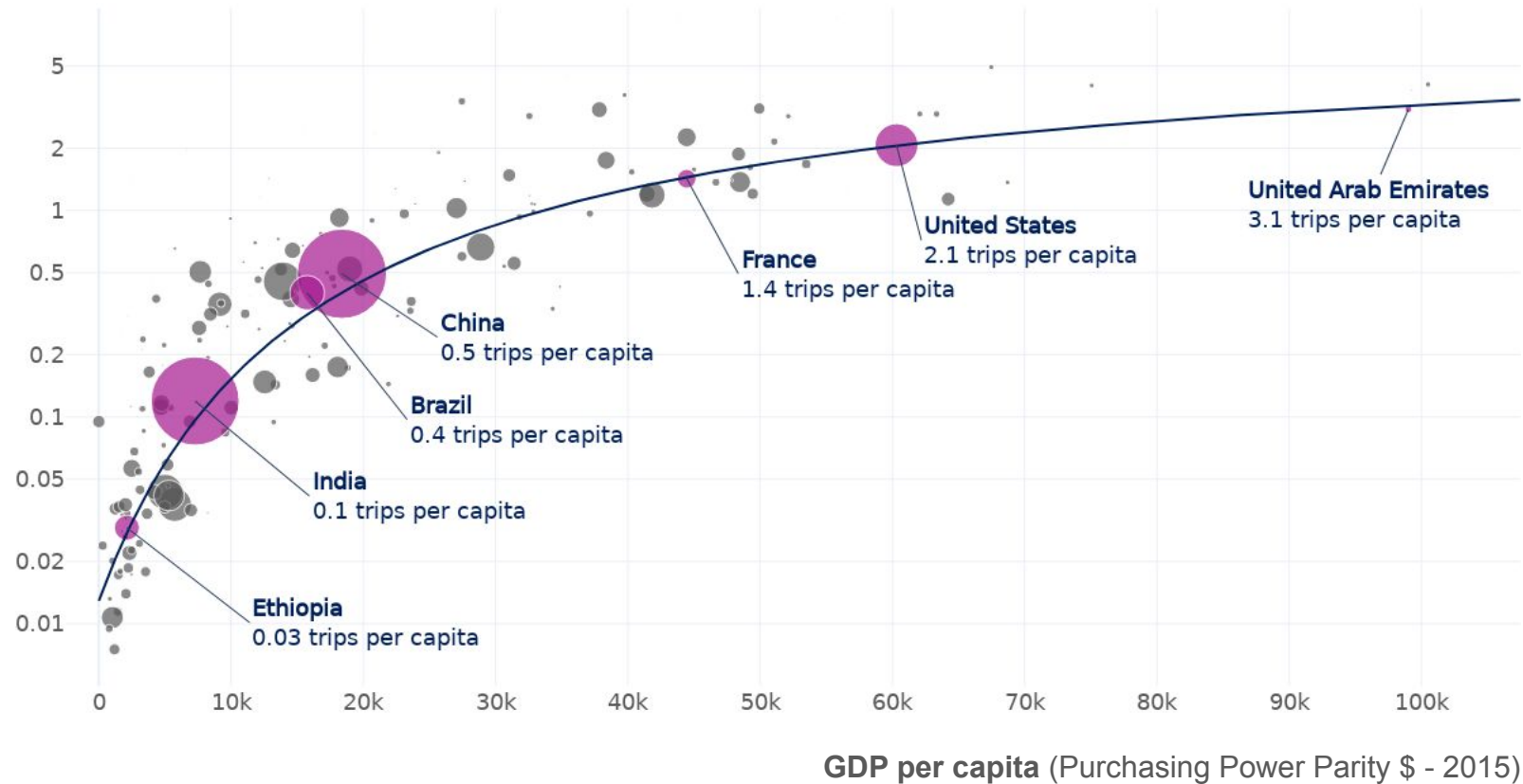
* Employment figures include direct, indirect, induced and tourism catalytic jobs



Air transport is tightly linked to economic development and geography

Source: IHS Markit, Sabre GDD, Airbus GMF

2019 yearly trips per capita (bubble size proportional to country population)



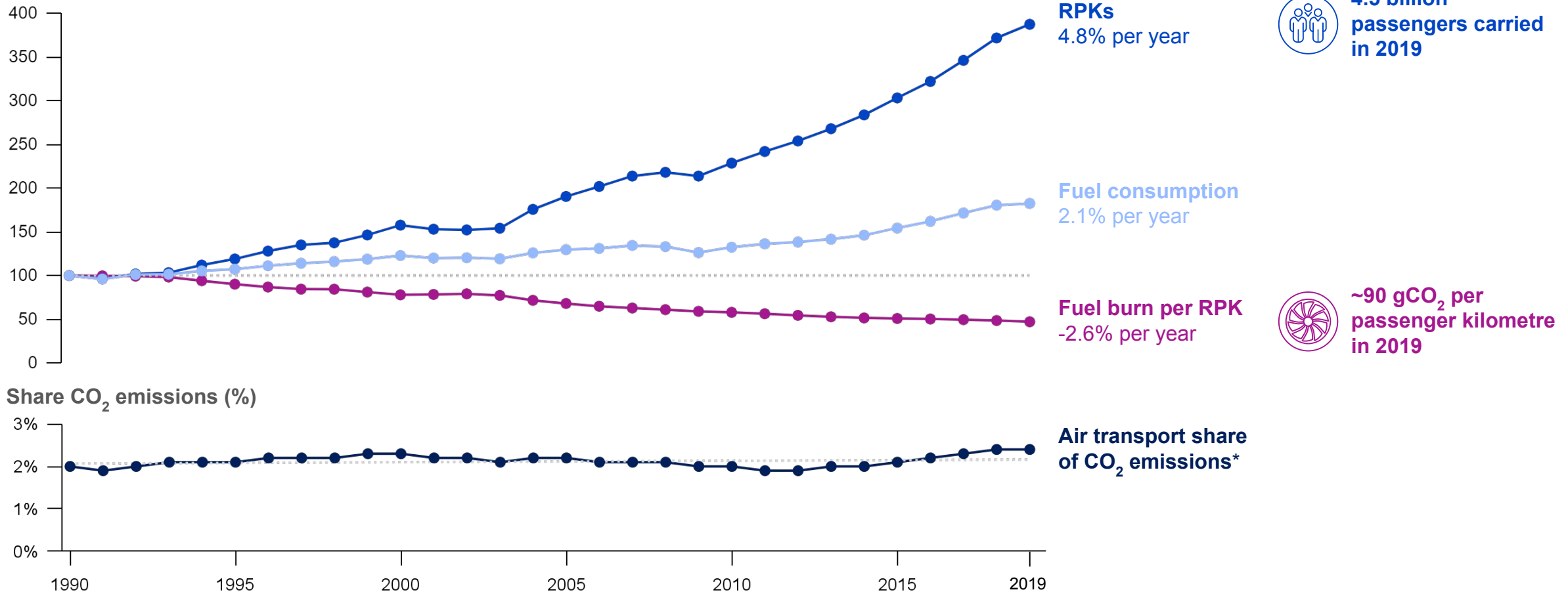
Efficiency improvement has enabled democratisation of air travel

CO₂ emissions per RPK halved through technology and operational improvements

Source: IATA, ICAO, Airbus, EDGAR CO₂ emissions, Airbus GMF

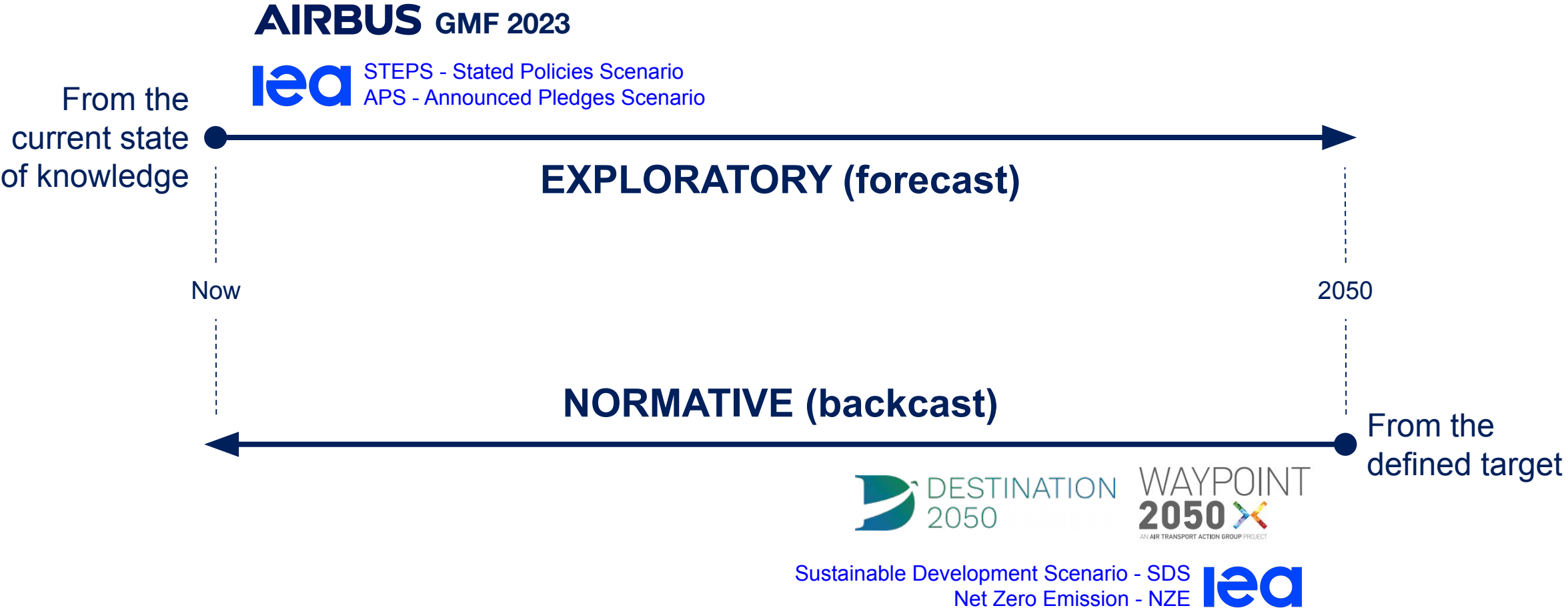
* Note: commercial air transport direct share of total anthropogenic CO₂ fossil emissions (excluding land use change)

Index base 100 in 1990



GMF23 is an exploratory scenario

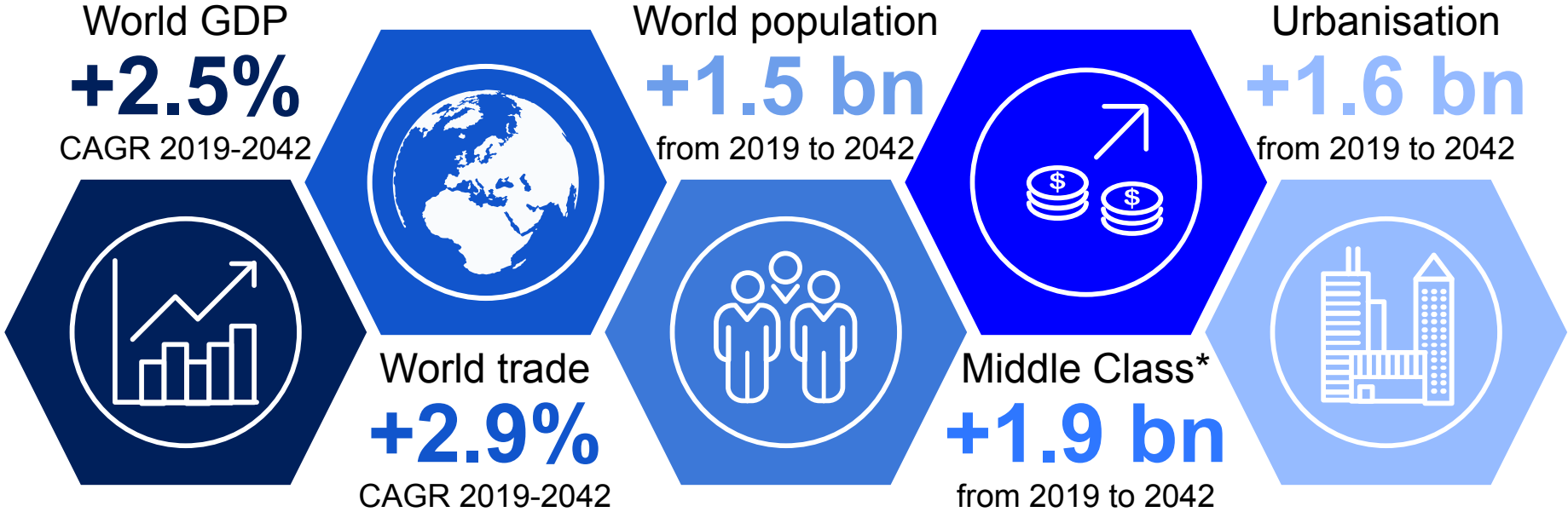
Source: Airbus GMF



Underlying outlook for GDP, trade and population growth

Source: IHS Markit, Airbus GMF





* Households with yearly income between \$20,000 and \$150,000 at PPP in constant 2015 prices



Sensitivities approach to deal with future uncertainties

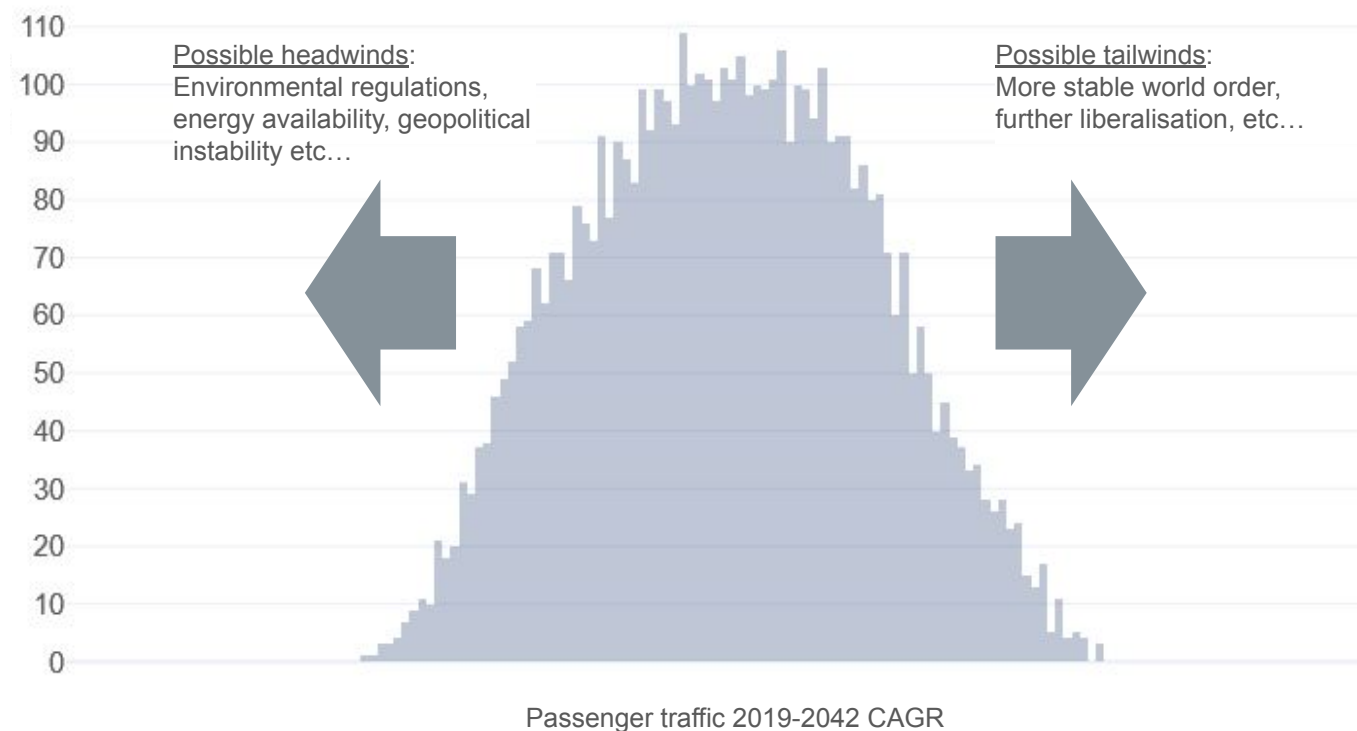
Source: Airbus GMF

Sensitivity on key drivers

-  GDP forecast
-  SAF: penetration, emission reduction factor and prices
-  Market-Based Measures: scope and prices
-  Fuel efficiency

**Traffic growth scenario median at
3.6% CAGR**

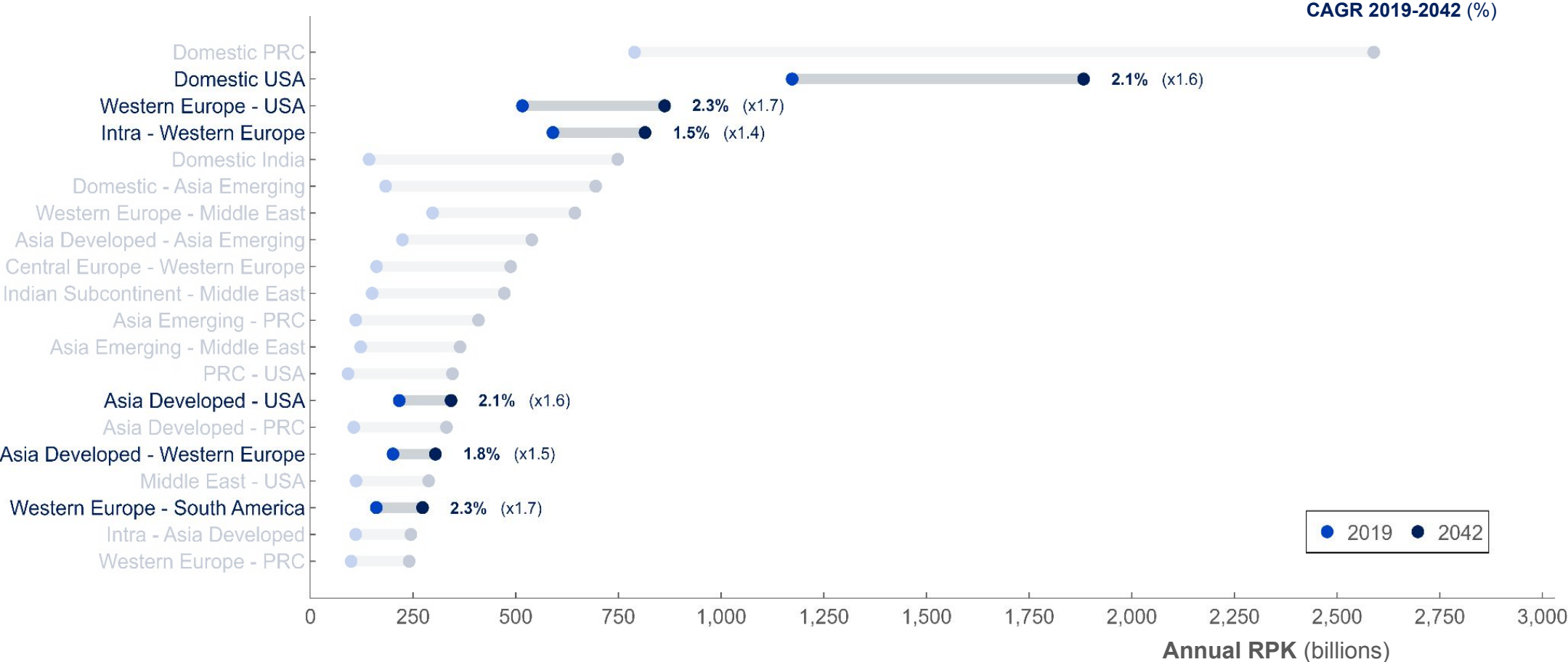
Number of traffic forecast scenarios



Modest growth in mature flows...

Source: Airbus GMF

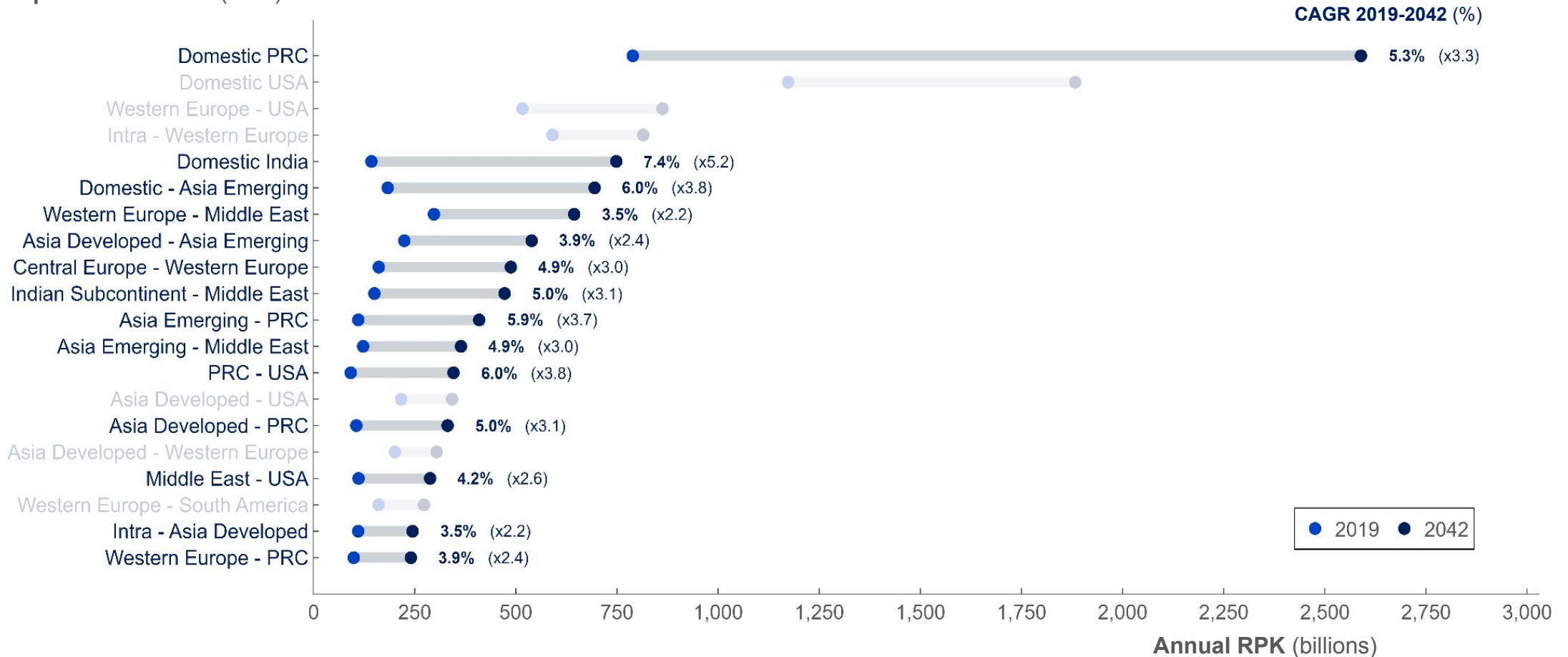
Top 20 traffic flows (RPK)



...and stronger growth in Asia and Middle East, led by India and PRC

Source: Airbus GMF

Top 20 traffic flows (RPK)

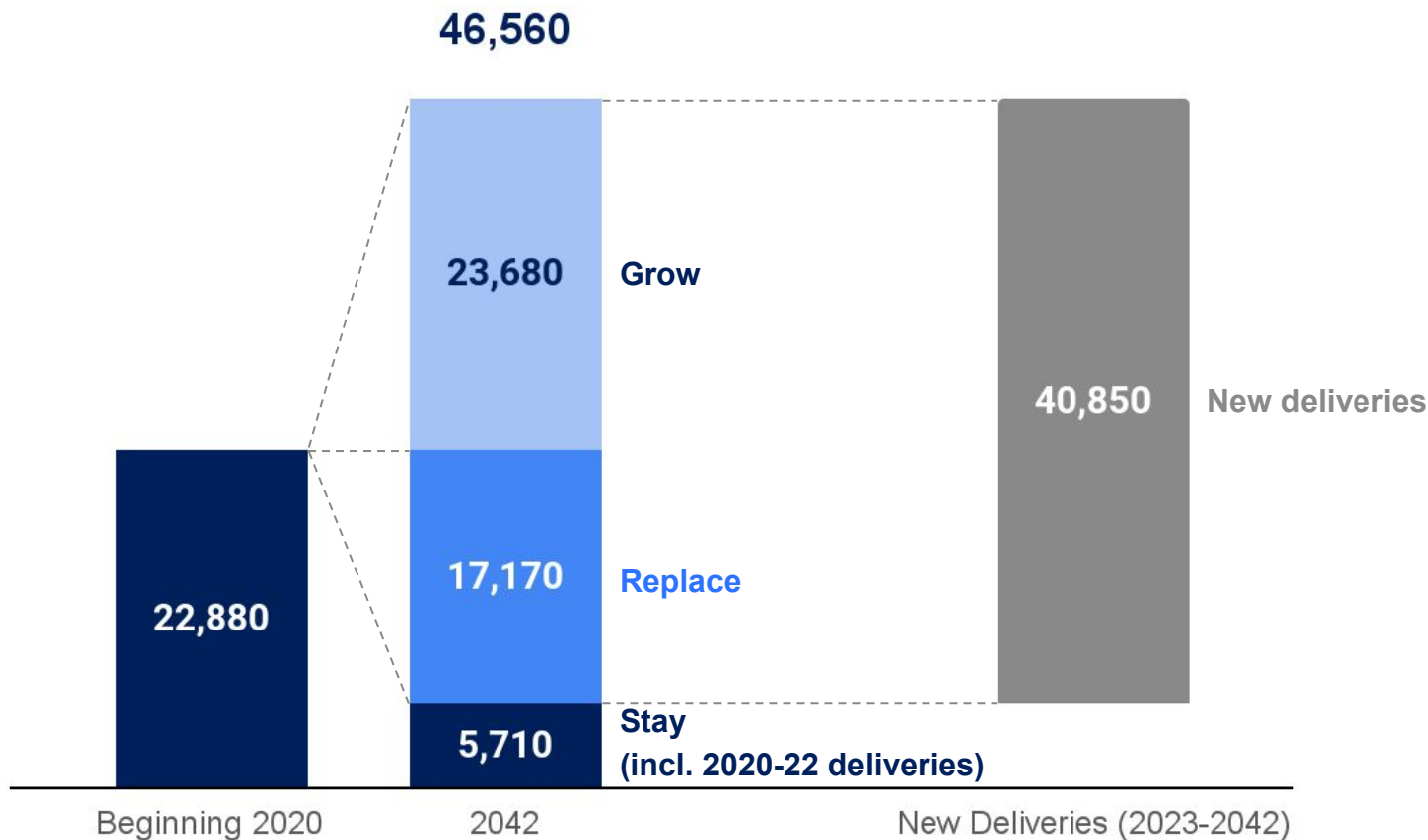


Demand for 40,850 new passenger & freighter aircraft

Source: Airbus GMF

Notes: Passenger aircraft above 100 seats & freighters with a payload above 10t

Number of aircraft



- **22,880 aircraft in-service beginning of 2020:**
 - 25% will stay in-service (including 2020-22 deliveries)
 - 75% will be replaced
- **40,850 new deliveries 2023-2042:**
 - 58% for growth
 - 42% for replacement

Demand for 40,850 new passenger & freighter aircraft over 2023-2042

Source: Airbus GMF

Note: Demand for passenger aircraft above 100 seats & freighters with a payload above 10t

Typically Single-Aisle

32,630 aircraft

80% share of total new deliveries

Typically Widebody

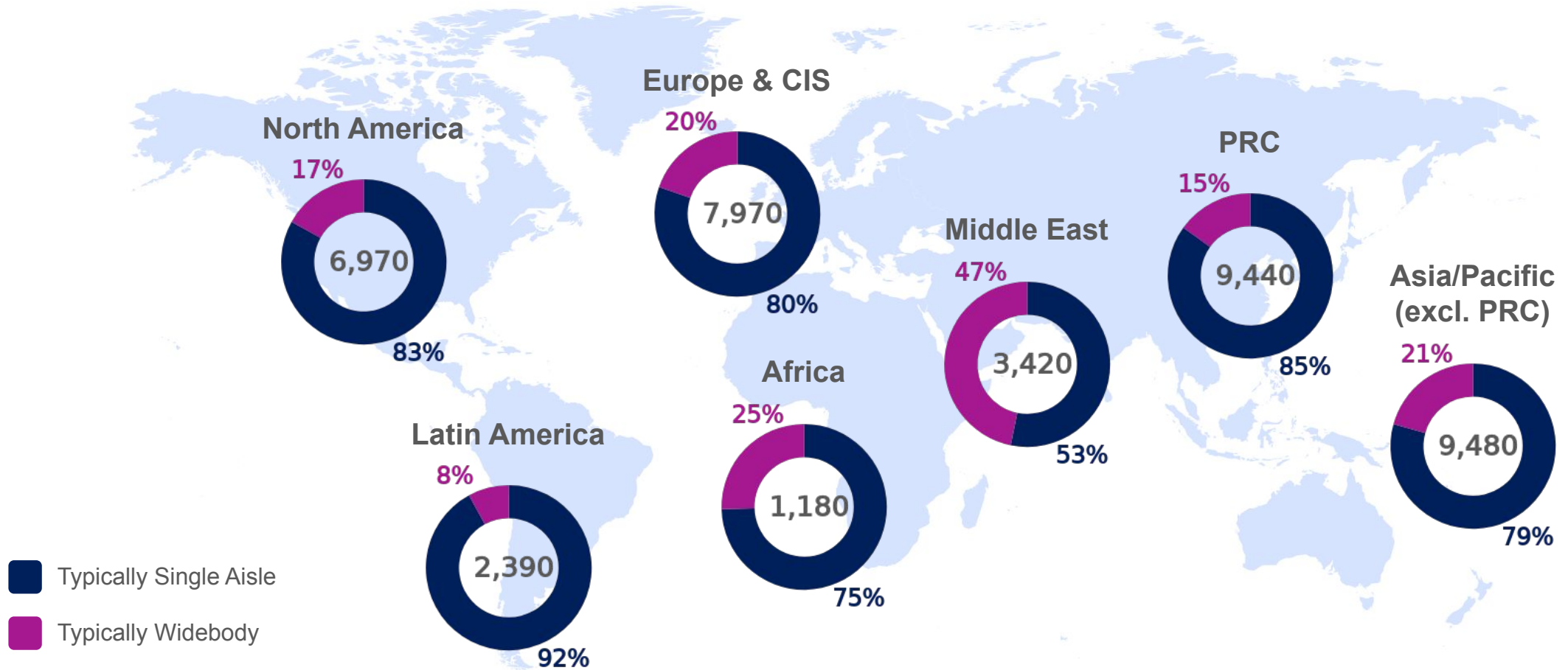
8,220 aircraft (inc. 920 new-built freighters)

20% share of total new deliveries

40,850 new deliveries between 2023 and 2042

Source Airbus GMF

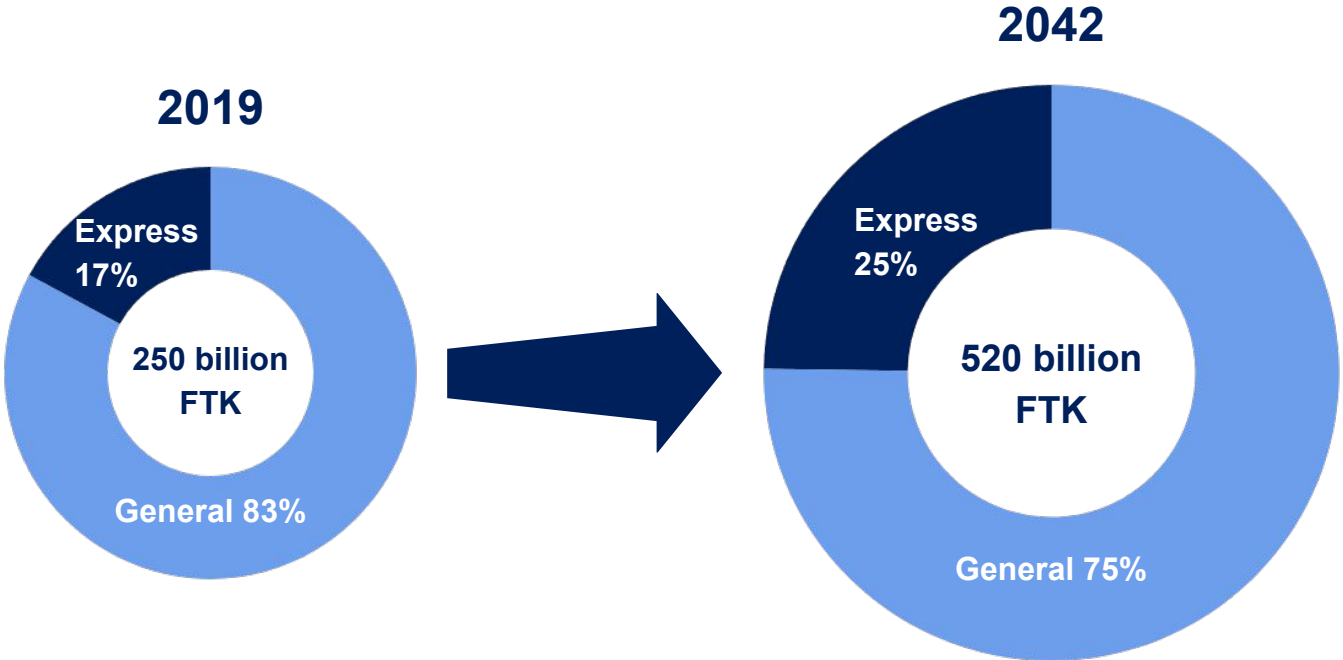
Notes: Passenger aircraft (≥ 100 seats) & Freighters (≥ 10 tons payload) | Figures rounded to nearest 10



Express air cargo growth will outpace General air cargo

Source: IHS Markit, Seabury, IATA, Airbus GMF

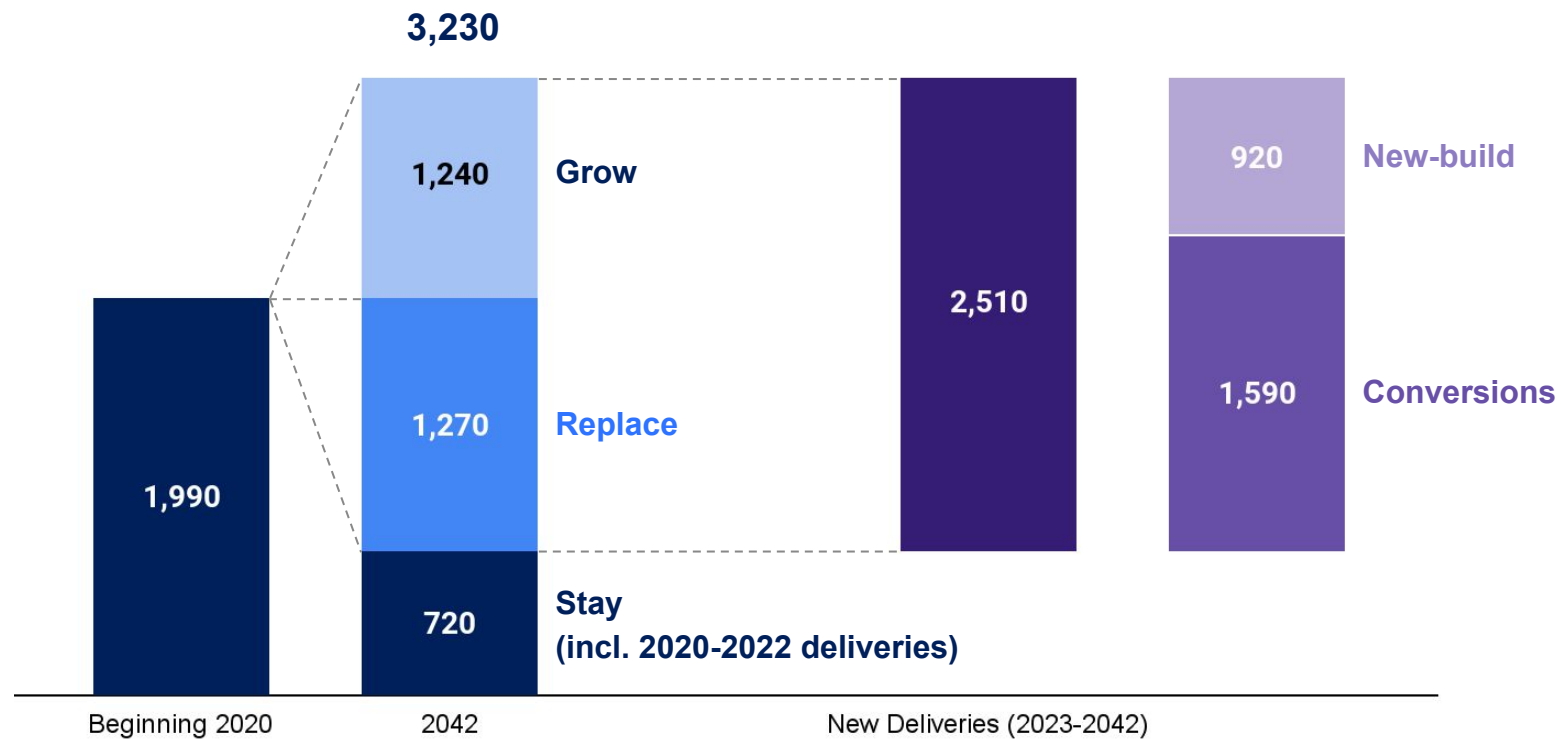
World air cargo traffic +3.2% CAGR 2019-2042



World freighter fleet in service will reach 3,230 aircraft by 2042

Source: Airbus GMF
Note: Freighters with a payload above 10t

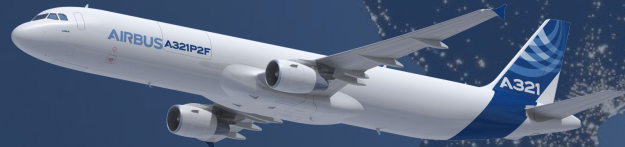
Number of freighter aircraft



Global demand for 2,510 freighters, over 2023-2042

Source: Airbus GMF
Note: Freighters with a payload above 10t

**Single-Aisle
(10t - 40t)**



1,020 aircraft

**Mid-size Widebody
(40t - 80t)**



890 aircraft

**Large Widebody
(> 80t)**



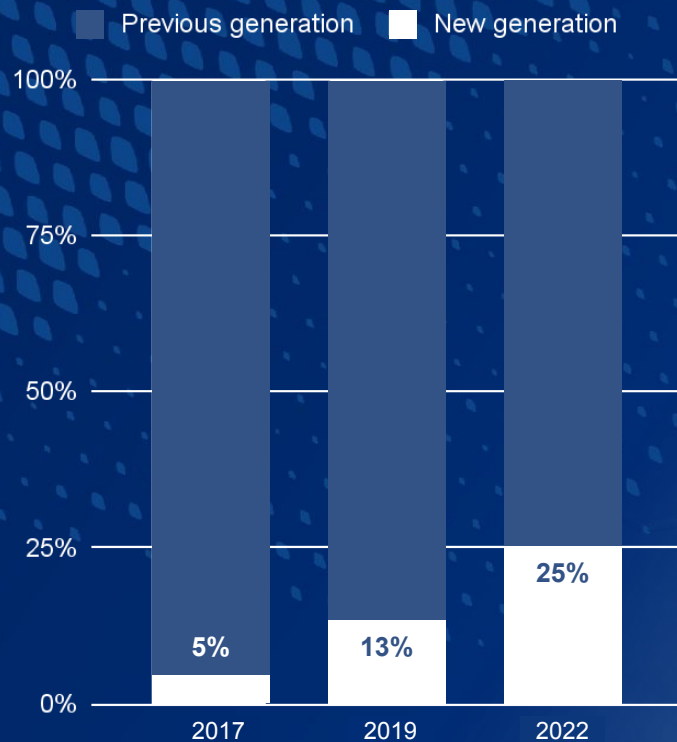
600 aircraft

Airlines require the latest, most efficient and lowest-emission aircraft

Source: Cirium, Airbus GMF

Passenger aircraft above 100 seats – Year end | New generation: A220, A320neo Fam., A330neo, A350, Emb-E2, 737Max, 787

% of in-service fleet by aircraft generation



**Fleet modernisation:
A strategic hedge against high energy costs
75% of fleet not yet latest generation**

Airbus product line delivers 20 - 40% fuel burn reduction

End of May 2023

A320 FAMILY



Backlog:
5,983 aircraft



A220

Backlog:
520 aircraft

Single-Aisle

A350F



Backlog:
39 aircraft

Freighter

A350

Backlog:
432 aircraft



A330neo

Backlog:
187 aircraft

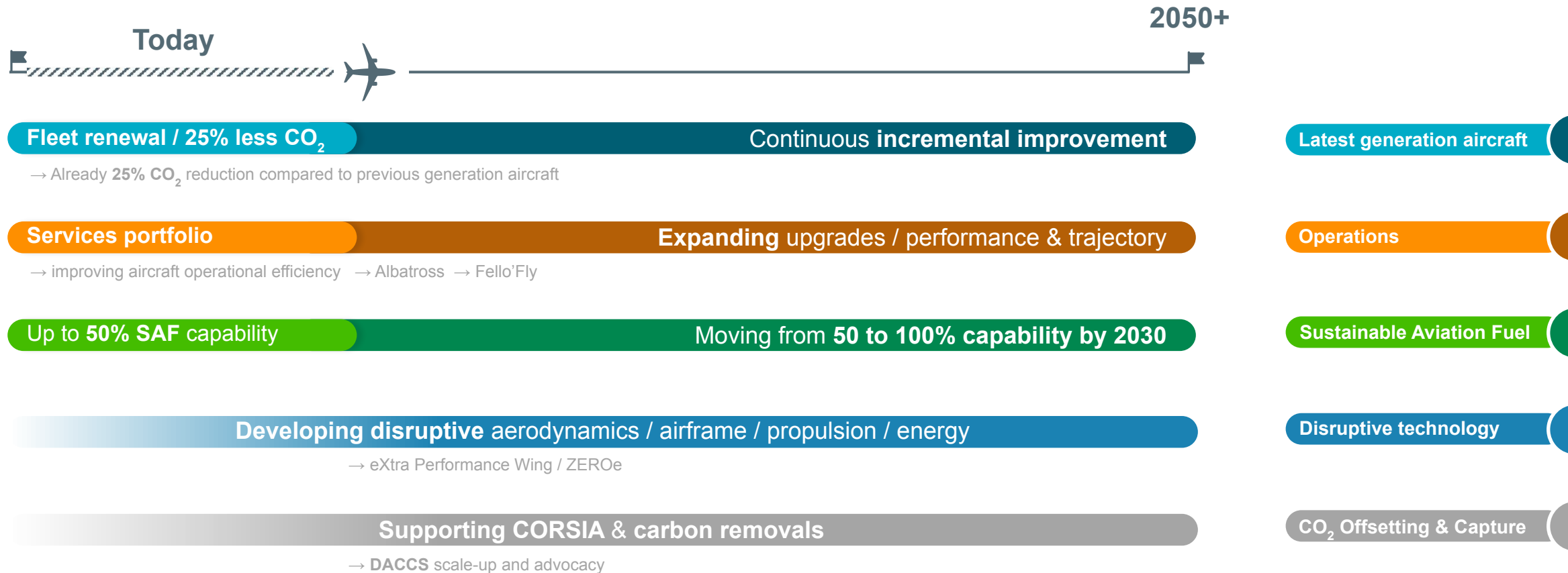
Widebody

AIRBUS

Airbus is leading aviation decarbonisation

Acting on all levers

Source: Airbus GMF





Latest Generation Aircraft



Operations & Infrastructures



Sustainable Aviation Fuels



Disruptive Technology



Market-based Measures

Latest generation aircraft

- **Up to 25% lower unit fuel and CO₂** vs. previous generation - across the entire Airbus Family
- Only 25%* of passenger in-service fleet are latest generation aircraft
- A350F will be the first latest generation freighter on the market

* Passenger aircraft above 100 seats – End 2022 / New generation: A220, A320neo Fam., A330neo, A350, Emb-E2, 737Max, 787



Latest Generation Aircraft



Operations & Infrastructures



Sustainable Aviation Fuels



Disruptive Technology



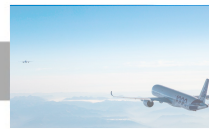
Market-based Measures

Operations & Infrastructures

- **Increased efficiency of the current fleet, by up to 10%, with a range of solutions**
- Upgraded aircraft systems
- Optimized flight trajectories
- Decarbonised on-ground operations
- Air Traffic Management



Latest Generation Aircraft



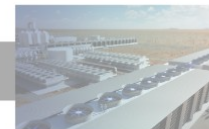
Operations & Infrastructures



Sustainable Aviation Fuels



Disruptive Technology



Market-based Measures

Sustainable Aviation Fuels

- Flying with 100% SAF reduces lifecycle CO₂ emissions by around 80%
- All Airbus aircraft are already certified to 50%, certification up to 100% by end of decade
- Industrial uptake needed to increase SAF's availability
- Coalitions and partnerships signed to foster production of SAF



Latest Generation Aircraft



Operations & Infrastructures



Sustainable Aviation Fuels



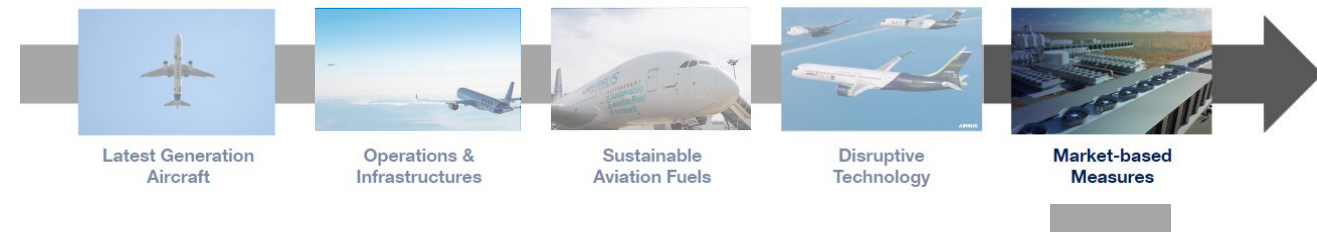
Disruptive Technology



Market-based Measures

Disruptive technologies

- Development, testing and maturity-based deployment of advanced technologies
- Ambition to bring a hydrogen-powered aircraft to the market by 2035
- Hydrogen as a fuel for turbines, for electric motors via fuel cells and to produce SAF
- **Developing advanced solutions for hydrogen or kerosene fuelled aircraft** (aerodynamics / airframe / propulsion / hybridization)



Carbon removal options



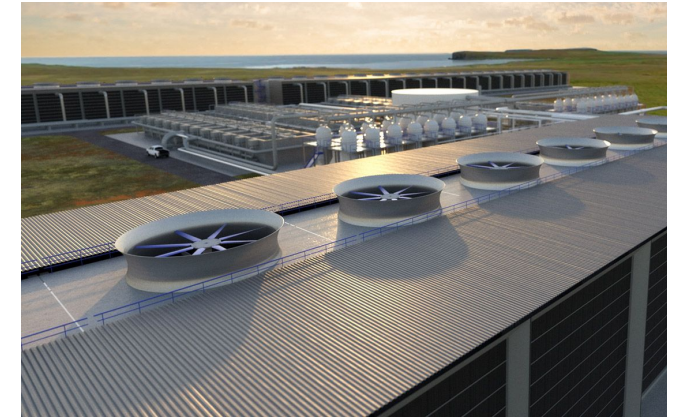
Nature-based solutions

- Widely used as offsets for compensation in voluntary and regulated markets



Point-Source Carbon Capture

- Emerging technology
- Competes with other industries
- Necessary as a transition solution to develop synthetic fuels at scale

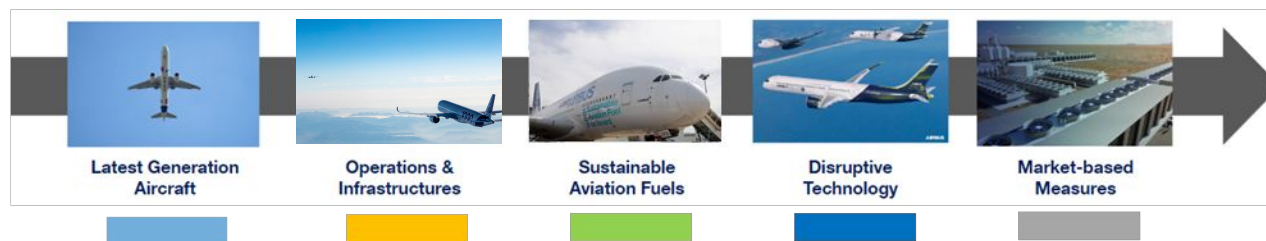
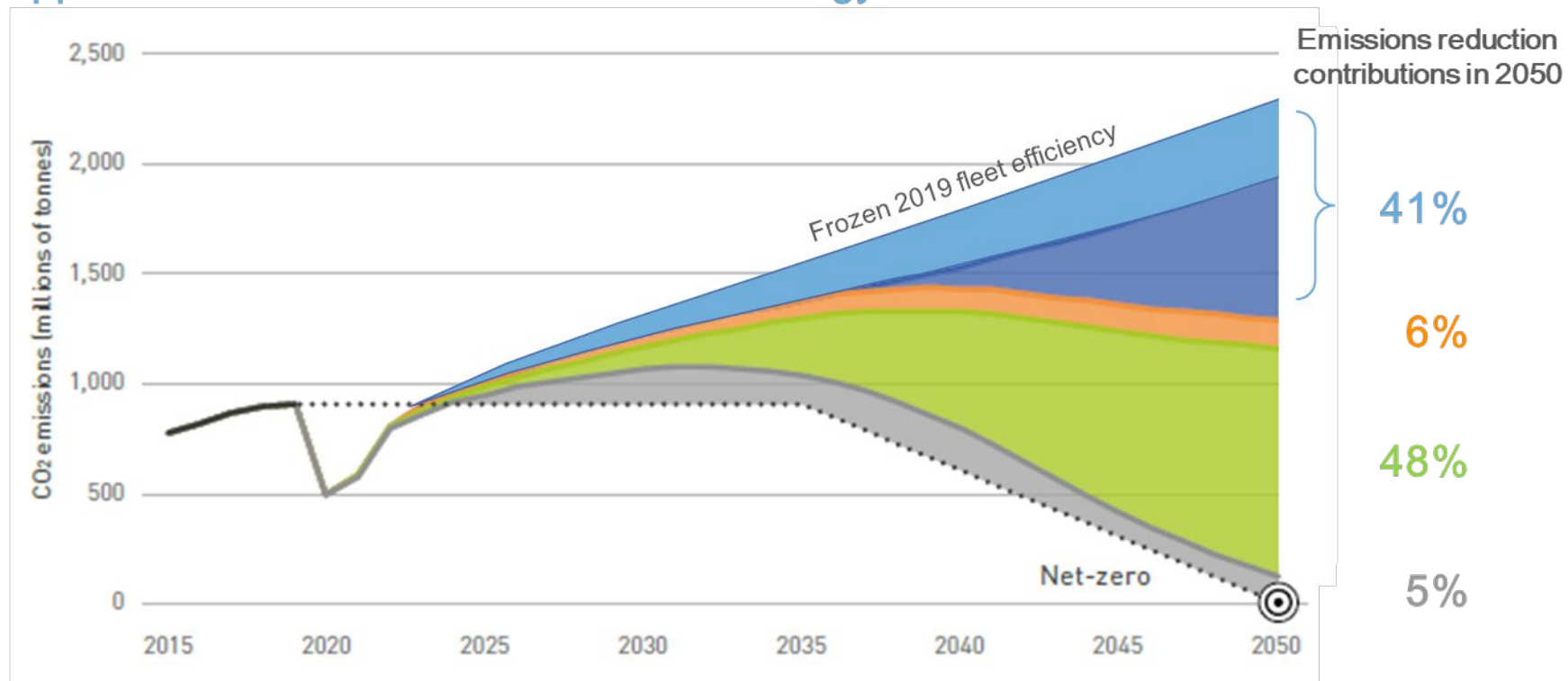


Direct Air Carbon Capture

- Emerging technology
- Enables credits from CO₂ storage and CO₂ as feedstock for synthetic fuels
- Carbon credits from storage can only be used on voluntary markets or local carbon markets

There is no single solution to decarbonise aviation

Airbus supports the ATAG most ambitious technology scenario



together
we are
Sustainable

> ATAG CO₂ Roadmap based on most ambitious technology scenario & central traffic growth scenario (3.1% CAGR 2019-2050)

AIRBUS

Takeaways

Source: Airbus GMF

Passenger Traffic
2019-2042 CAGR

3.6%

Freight Traffic
2019-2042 CAGR

3.2%

Fleet in service
beginning of 2020

22,880 aircraft

Fleet in service in 2042

46,560 aircraft

New deliveries 2023-2042

40,850 aircraft

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