CONNECTING
THE FUTURE

TURBOPROP MARKET FORECAST **2018-2037**

INTRODUCTION

The competitive environment of regional aviation is showing its utmost importance for developing local economies and territorial cohesion. It not only feeds hubs, but more importantly, it allows connections to the world's regional capitals.

Everyone likes fast and easy trips from a nearby airport. Not only do turboprops offer the right capacity and technology, they also reach places where no other aircraft can go: more than one third of the world's commercial airports rely exclusively on turboprops.

As new regions emerge, new regional routes will be opened and developed. This is another mission at which turboprops excel.

By efficiently connecting such a large diversity of communities, with the most limited environmental footprint, turboprops are revealed as the most efficient choice to quickly enable and sustain economic development of many regions.

Looking 20 years ahead requires us not only to study the past and the world today but also to imagine the networks that will shape our future.

Christian Scherer
Chief Executive Officer ATR

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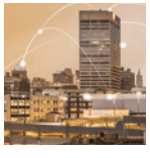
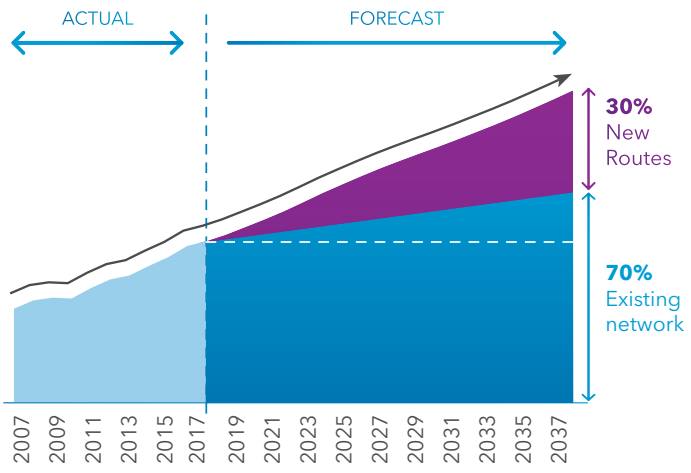


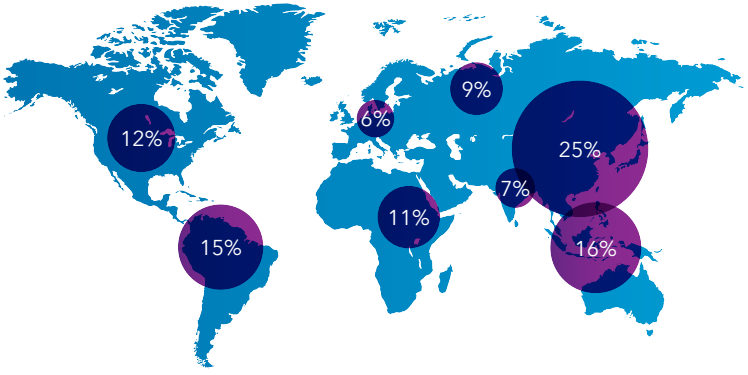
56 **FREIGHTERS**

EXECUTIVE SUMMARY

AVERAGE ANNUAL TRAFFIC GROWTH



NEW TURBOPROP ROUTES



300	Africa & Middle East
330	North America
410	Latin America & Caribbean
440	Asia Pacific
200	South Asia
690	China
240	Central Europe, Russia & CIS
160	Western Europe

+3.2%
GDP

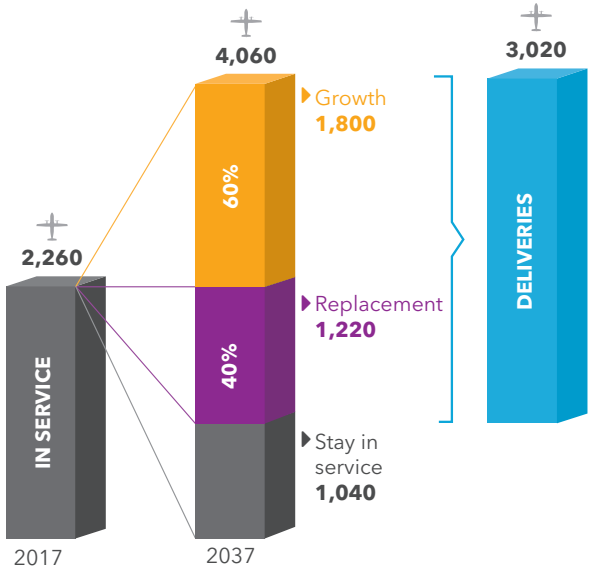
+4.5%
TRAFFIC

30%
of 2037 activity comes from new routes

+2,770
potential new routes created

TURBOPROP FLEET EVOLUTION AND DELIVERIES

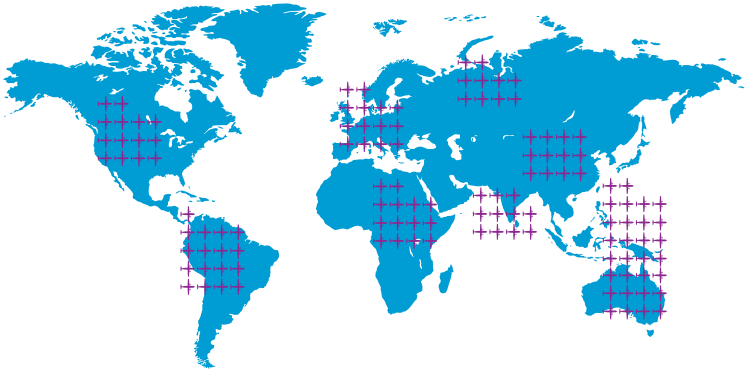
In-service passenger fleets



3,020
DELIVERIES

- Fleet growth is envisioned to account for 60% of turboprop deliveries in the next 20 years.
- Most of this growth is driven by the creation of new routes as part of airlines' network development strategies.
- The other part relates to the expanded usage of the turboprop technology in pre-existing markets.

TURBOPROP DELIVERIES



350	Africa & Middle East
350	North America
420	Latin America & Caribbean
740	Asia Pacific
260	South Asia
300	China
250	Central Europe, Russia & CIS
350	Western Europe

630
40-60 SEATS

2,390
61-80 SEATS


RATIONAL
RANKIN INLET
CANADA
10
ATR
FLIGHTS
PER DAY

ASSUMPTIONS

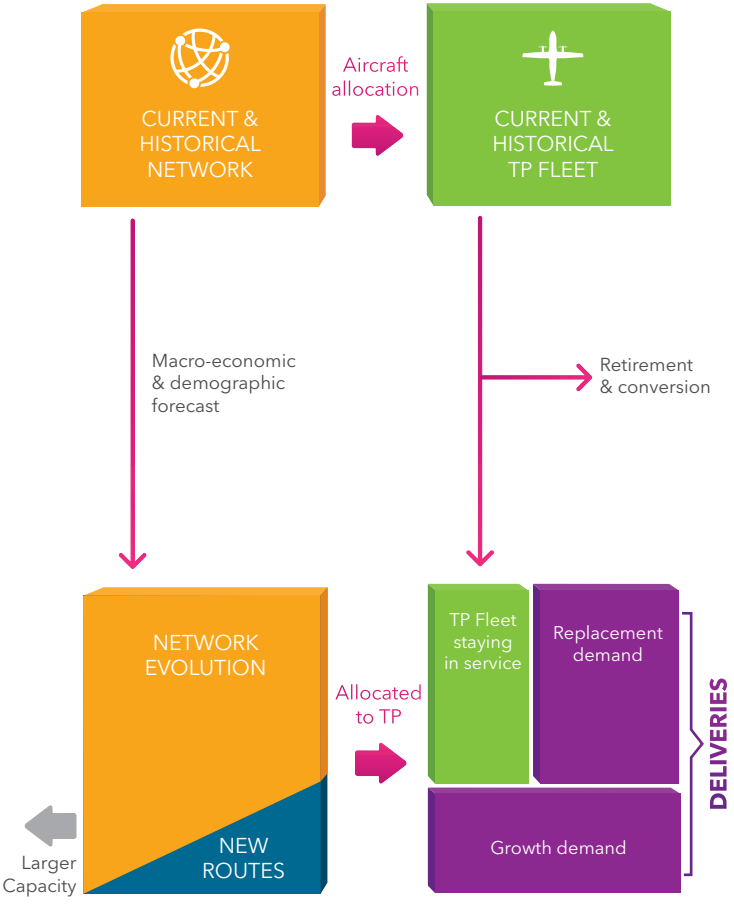
The following assumptions and definitions apply unless otherwise specified:

- ASK: Available Seat Kilometer – seats multiplied by distance.
- GDP: Gross Domestic Product considered in this document at Purchasing Power Parity.
- Mature markets: North America, Western Europe, Japan, South Korea, Australia, Singapore, Chinese Taipei, Hong Kong, New Zealand & South Africa.
- Turboprop in-service fleets are considered in the range of 20-80 seats in standard configuration.
- Network range up to 900 NM ~ 1,700 km ~1,000 mi.
- Route size considered: up to 450 daily seats each way per carrier.
- Traffic allocation to all types of existing aircraft categories from 20 to 200 seats, jet and turboprop technologies.
- Deliveries include aircraft currently in-production and launched programs.

Sources

- ATR Studies and survey
- Flightglobal
- IATA
- OAG
- Oxford Economics
- US Department of Transportation
- US Energy Information Administration

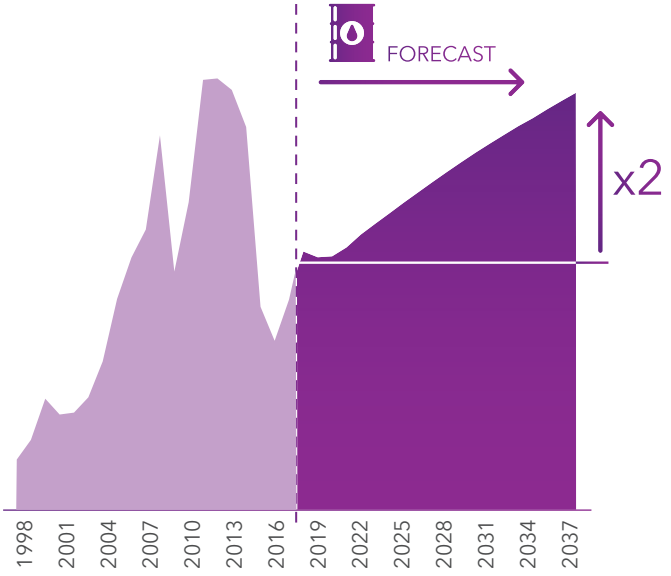
FORECAST STREAM



REGIONAL **TRAVEL TRENDS**

HYDERABAD
INDIA
40 ATR FLIGHTS PER DAY

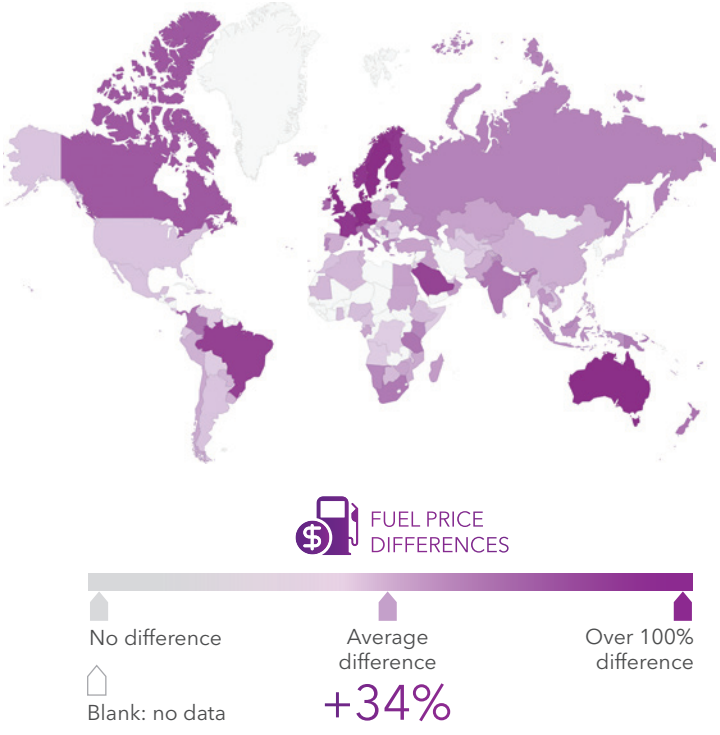
OIL PRICE EVOLUTION



Data: US Energy Information Administration/ Haver Analytics

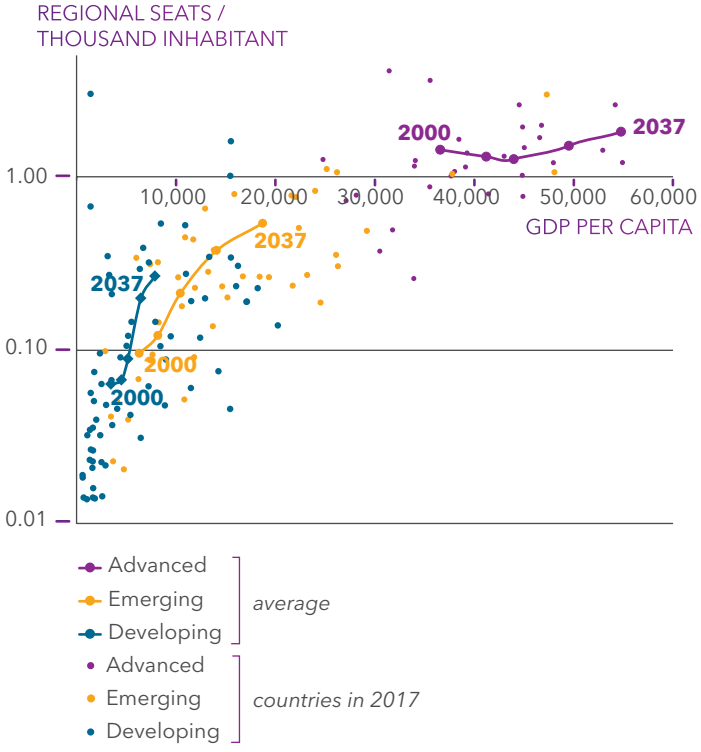
- In a context of economical growth, oil price is expected to double in the next 20 years, regardless of temporary fluctuations.
- Fuel price will again be a key decision factor for airlines.

DIFFERENCE IN FUEL PRICE BETWEEN MAIN AIRPORTS AND REGIONAL AIRPORTS



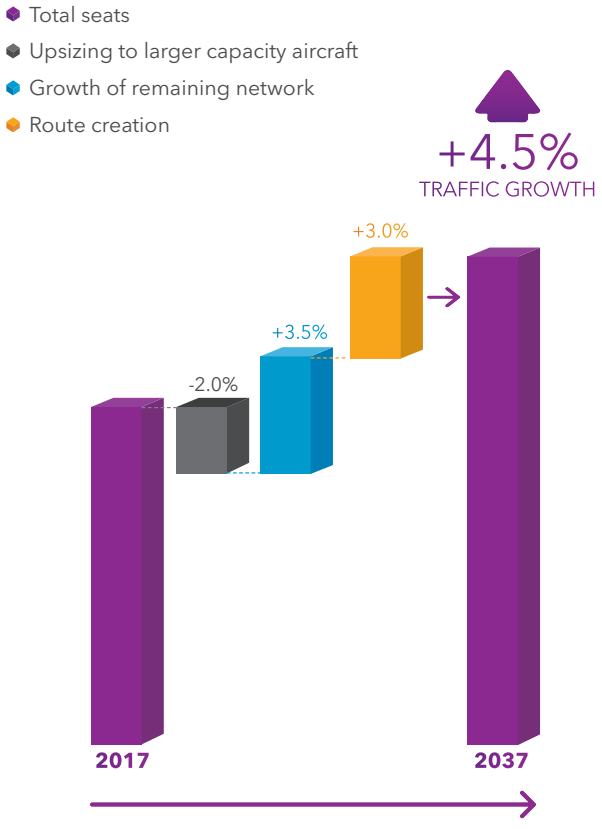
- Fuel price is higher in regional airports than in main airports due to higher fuel transportation costs, which translates to a worldwide average extra cost of **+34%**.
- Turboprop technology limits airline exposure to this additional volatility.

SEATS FLOWN VS WEALTH PER CAPITA



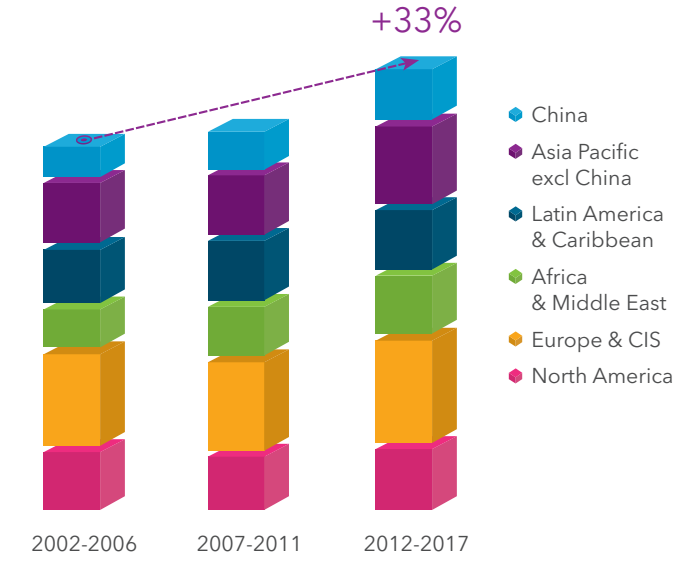
- As middle-class and consumer spending increase in many regions, the propensity to travel will develop - with new emerging regional markets taking the lead.
- It has been observed recently that people in countries with a strong turboprop presence have a 40% higher propensity to travel regionally.

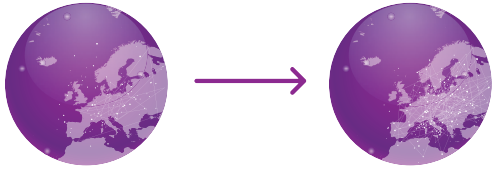
TURBOPROP MARKET MECHANISMS



- Creation of new routes will outpace upsizing to larger aircraft, and will contribute **2/3** of total growth for the next twenty years.

NUMBER OF REGIONAL ROUTES CREATED

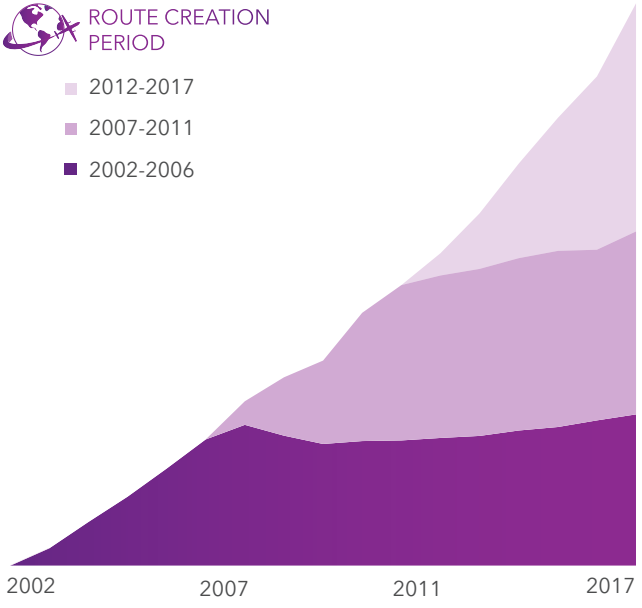




58%

of the current **regional network** has been created in the last 15 years

SEATS FLOWN ON ROUTES CREATED SINCE 2002

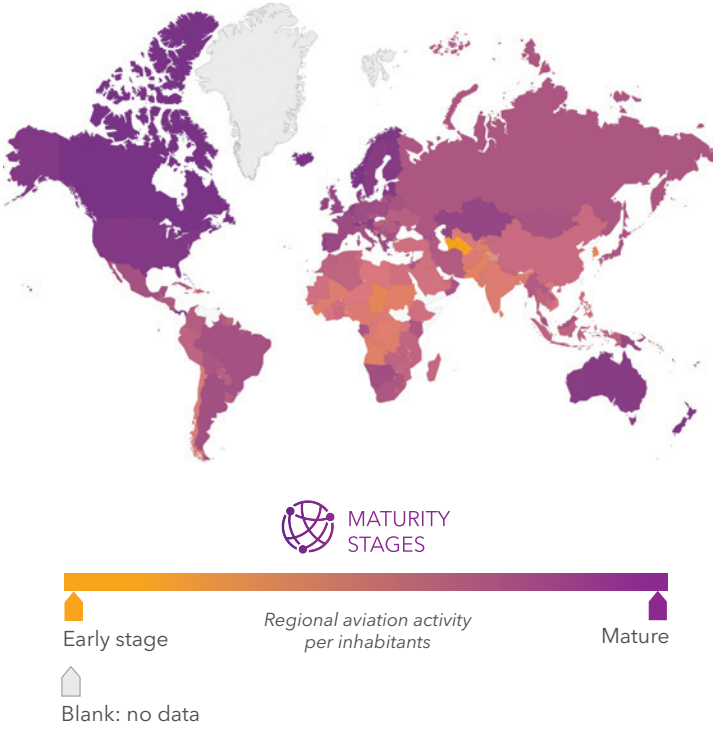


› The bulk of growth comes from the Asia-Pacific region. Europe is once again creating routes while simultaneously growth in China is gaining momentum.

21%

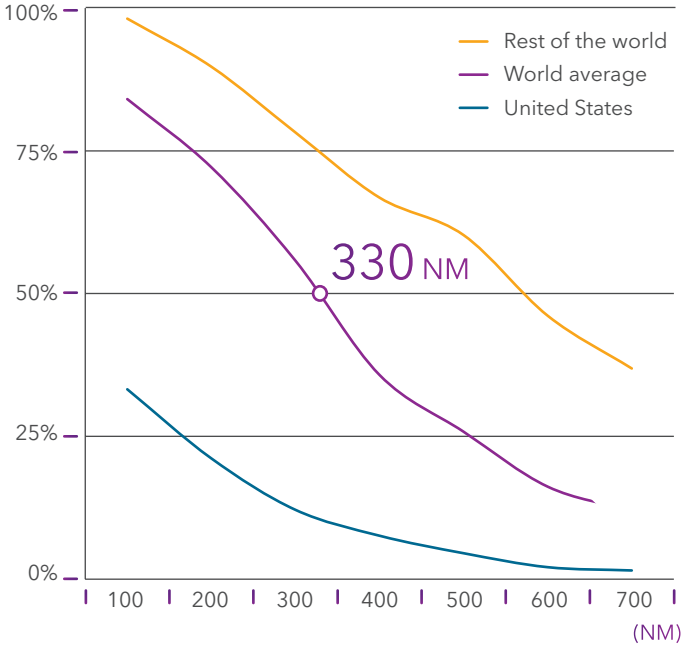
of current **regional seats** come from routes created in the last 15 years

REGIONAL NETWORKS MATURITY STAGE



- Although some are very well populated, many countries still have poor regional connectivity, contrasting with mature European and North American markets.
- Leveraging turboprop advantages (cost efficiency, access to challenging airfields), these countries will contribute to the bulk of market growth while developing the economies of secondary and tertiary cities.

SHARE OF TURBOPROP VS REGIONAL JET



- Turboprops are airlines' preferred choice worldwide for distances up to **330 NM**.
- There is a substantial fleet of legacy regional jets in the United States leading to the contrast between this country and other regions.

POTENTIAL EMISSION SAVINGS BY REPLACING REGIONAL JETS WITH TURBOPROPS

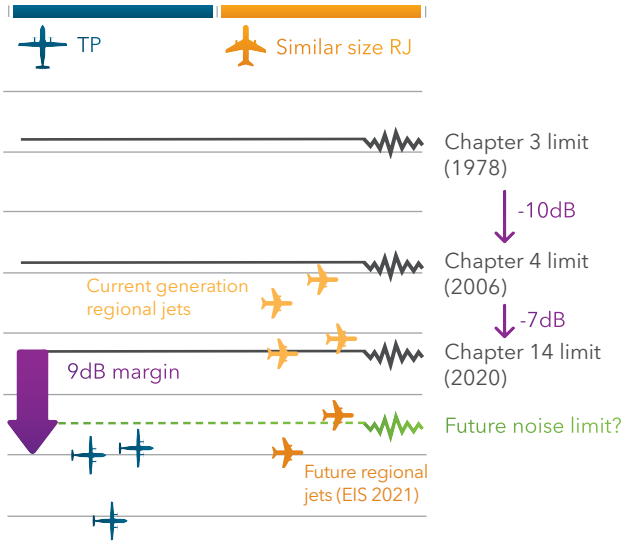
Up to **11%** of overall regional **aviation emissions** saved

CO2 ANNUAL SAVINGS BY REPLACING JETS ON ROUTES UP TO...

- 400-500 NM
- 300-400 NM
- 200-300 NM
- Up to 200 NM

- Assuming all short haul flights operated by regional jets today are replaced by modern turboprops, 11% of overall regional aviation CO_2 emissions could be saved.
- These **4,100,000 tonnes** of CO_2 overall regional aviation emissions are equivalent to the annual absorption of **200,000,000 trees**.

EFFECTIVE PERCEIVED NOISE IN DECIBEL (EPNDB)

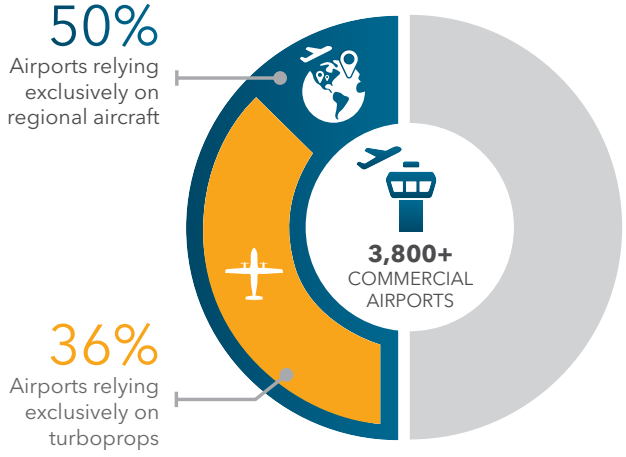


- Today's environment noise regulations are getting more and more stringent.
- With their remarkably low noise signature, turboprop aircraft are the benchmark with a strong margin to 2020s' ICAO standards.
- Turboprops' low noise footprint allows operations at airports located in city centres that impose strict sound levels, like London City or Stockholm Bromma.

Turboprops are already meeting future standards

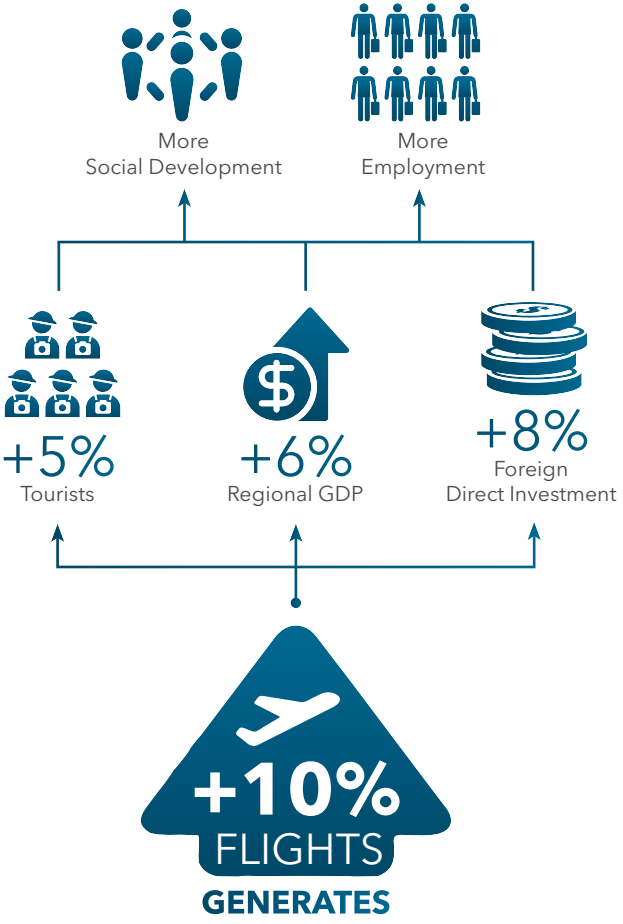
BENEFITS OF REGIONAL AVIATION

AIRPORTS SERVED EXCLUSIVELY BY REGIONAL AIRCRAFT



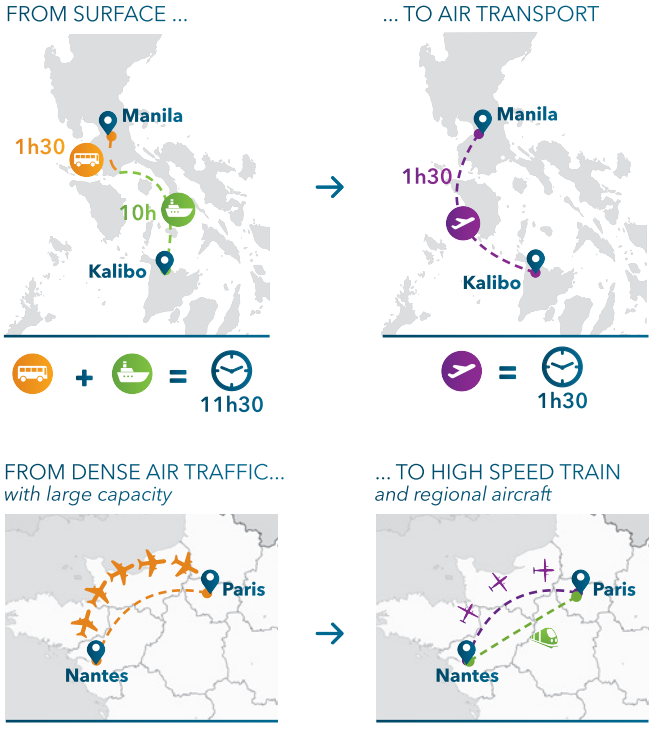
- Many communities rely on regional aircraft to connect to other countries and regions in the world. Through an adapted technology and capacity, turboprops efficiently answer this essential market need.
- Turboprops are the benchmark as they provide specifically adapted economics for the average worldwide route length of 300 NM.
- Furthermore they ensure accessibility to all airfield profiles and are the lifeline of many communities.

ECONOMIC IMPACT OF REGIONAL AVIATION



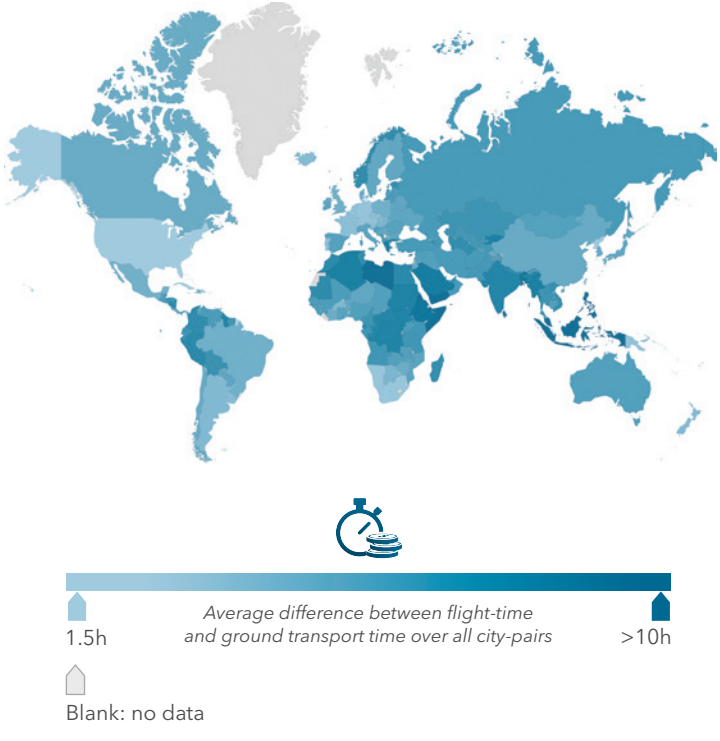
- Either through tourism development or by establishing business, interlinking secondary and tertiary cities allows every community to be connected and benefit from world economic growth – a key component of sustainable development.

DIFFERENT SOLUTIONS FOR DIFFERENT SCHEMES



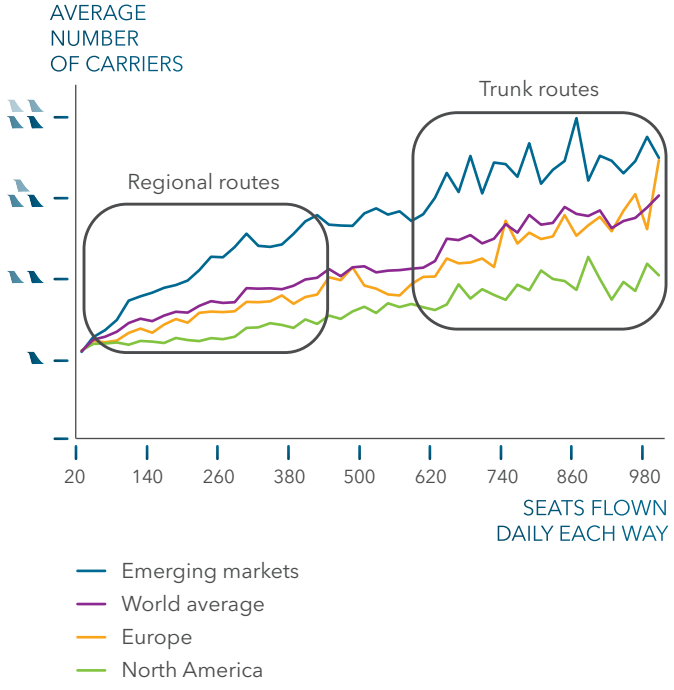
- Turboprops provide a valuable travel solution which qualitatively complements any alternative mode of ground transportation.
- Not only turboprops provide travelers accustomed to slower modes of ground transportation with the comfort and convenience of extra speed, but they also maintain essential air connectivity on previously dense routes where flows have reached levels that allow high speed trains to 'dry out' air traffic.

AVERAGE TIME BENEFIT OF AIR VS GROUND TRANSPORT



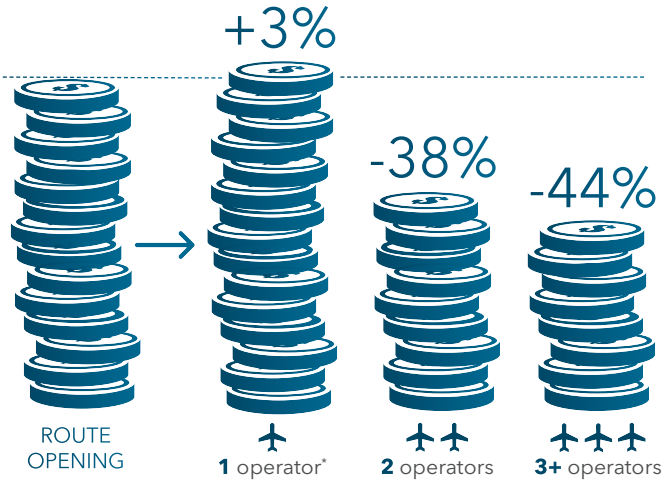
- Depending on ground infrastructure and/or geographical constraint, the time saved flying regionally is highly valuable to travellers.
- Moreover, regional air transport is a quick enabler of economic development as it requires shorter lead-time to implement connectivity.

COMPETITION FORCES VS TRAFFIC VOLUME



- Regional networks tend to be operated by fewer carriers than routes with larger traffic volume.
- This "blue ocean" provides a wealth of opportunities to get away from the cash-intensive competition on main routes

YIELD DIFFERENCE IN REGIONAL ROUTES DEPENDING ON NUMBER OF OPERATORS

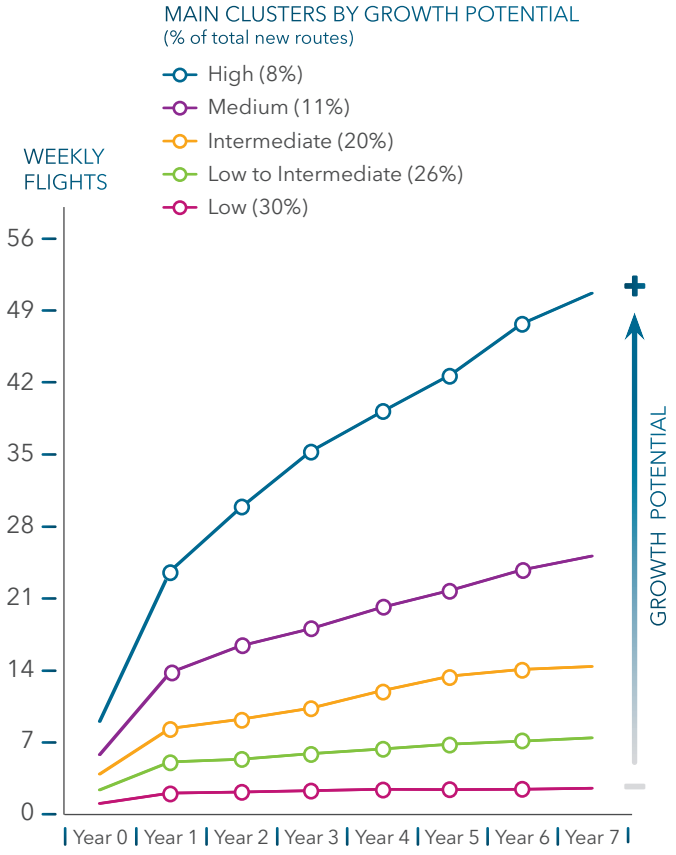


* *after one year since route opening*

- Opening a route offers a dominant competitive position that eventually leads to a higher yield when the route is mature. However, the entry of new competitors has an adverse effect on total revenues.
- Turboprops, as typical first movers, offer higher rewards for exploring new routes and developing regional networks.

AFTER ROUTE OPENING: DIFFERENT GROWTH PROFILES

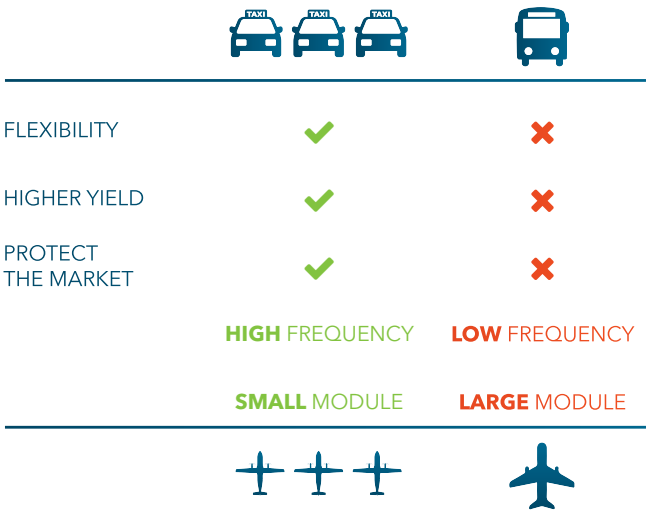
AVERAGE ROUTE GROWTH PROFILES



› There are various patterns of new route development, ranging from fast growing routes likely to welcome single-aisle capacity within a few years, to flows whose growth is capped due to more limited traffic potential.

ADVANTAGES OF HIGH FREQUENCIES WITH TURBOPROPS

LEVERAGING SCHEDULE FLEXIBILITY

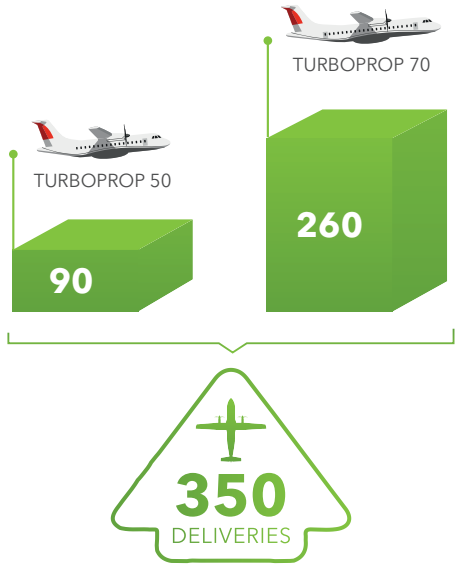


› Operating high frequencies with turboprops offers a competitive advantage to airlines:

- Adapt to peaks of demand with a flexible offer and strategic utilisation of slots
- More choices for business passengers, which allows **20%** higher yield than low frequencies
- Protect the market by blocking the entry of new operators.

FORECAST
BY REGION

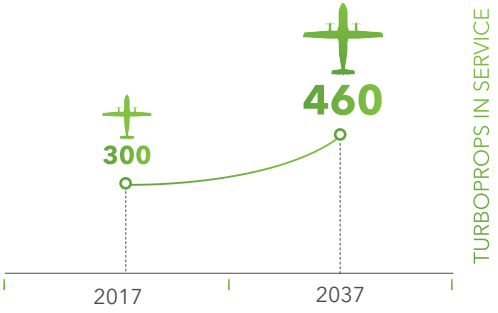
FOCUS ON AFRICA & MIDDLE EAST



+3.5%
GDP GROWTH

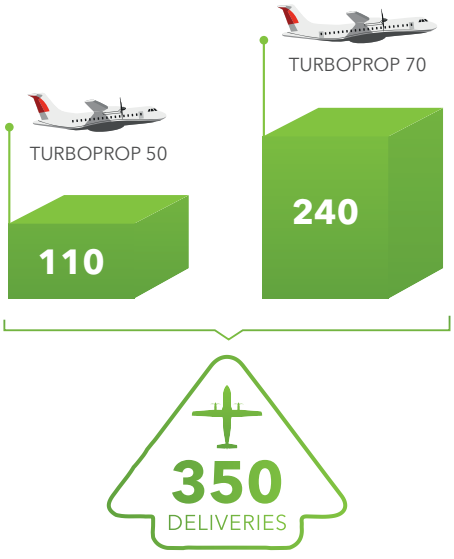
+4%
TRAFFIC GROWTH

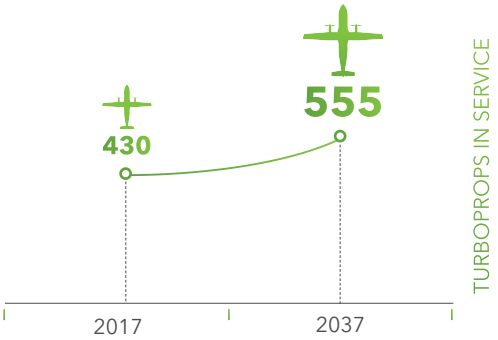
300
NEW ROUTES



- The Africa & Middle-East region is the largest and most versatile region, but the poorest in terms of road and railway infrastructure.
- Many ageing 30-50 seater aircraft are costly to operate and need to be replaced.
- Modern turboprops are the easiest way to an immediate, safe and affordable regional connectivity, which answers accessibility challenges and supports local economies.

FOCUS ON NORTH AMERICA





+1.7%
GDP GROWTH

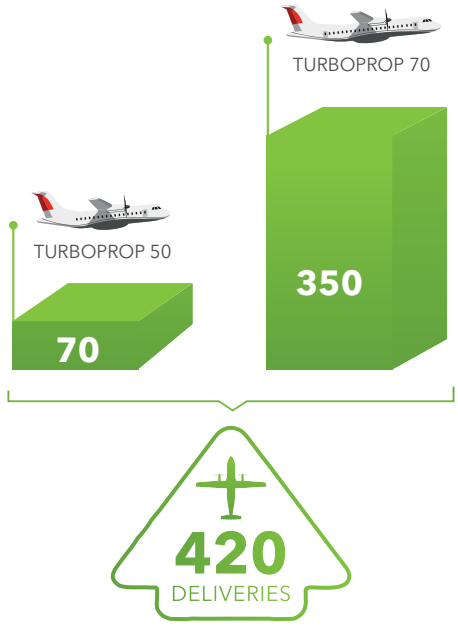
+2.2%
TRAFFIC GROWTH

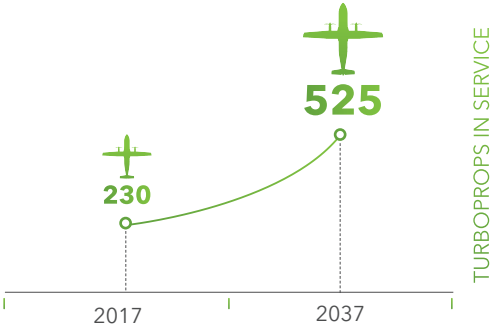
330
NEW ROUTES

- With many inefficient 50-seater jets left over from the 90s and the subsequent average capacity growth, US regional aviation has failed to maintain many air links. Modern turboprops can restore connectivity by replacing ageing 30-50-seaters and providing an efficient alternative to a 5-6 hour drive.

- In Canada, with their enhanced performance, modern turboprops will access more communities and extend the essential air service required.

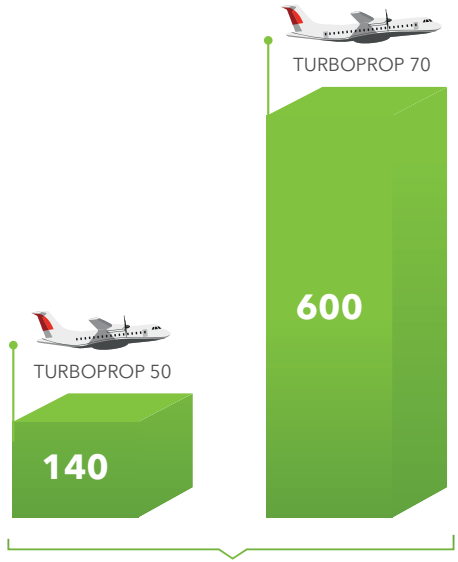
FOCUS ON LATIN AMERICA & CARIBBEAN

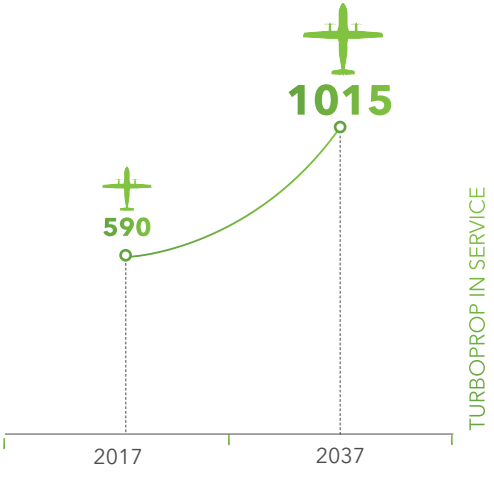




- Turboprops are a proven strategic component for airlines to offer access to an extensive network in Latin America at suitable economics. Growth will come from connecting communities to economic recovery.
- Essential for the tourism and socio-economic development of the Caribbean, turboprops will remain the island hopper benchmark for sustainable air links.

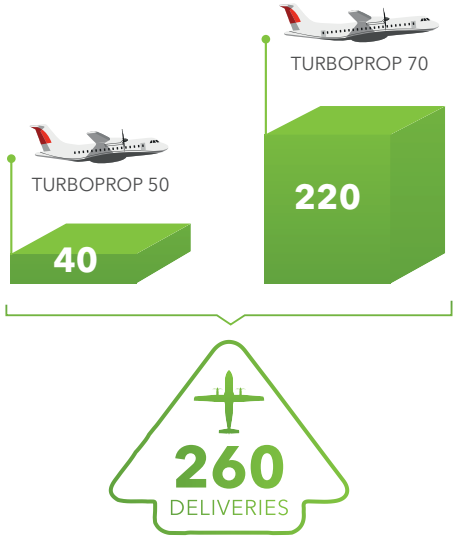
FOCUS ON ASIA PACIFIC

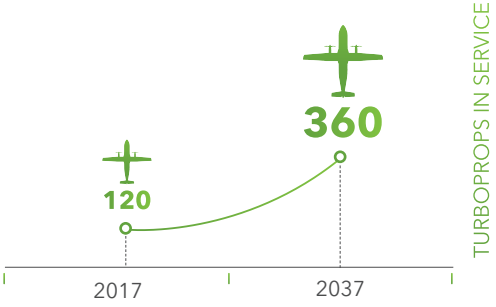




- Route creation will accelerate and drive growth, especially in South East Asia, where air connections will offer a faster and more efficient choice to travelers.
- Many ageing and out of production turboprops are still operated in mature countries and will have to be replaced.

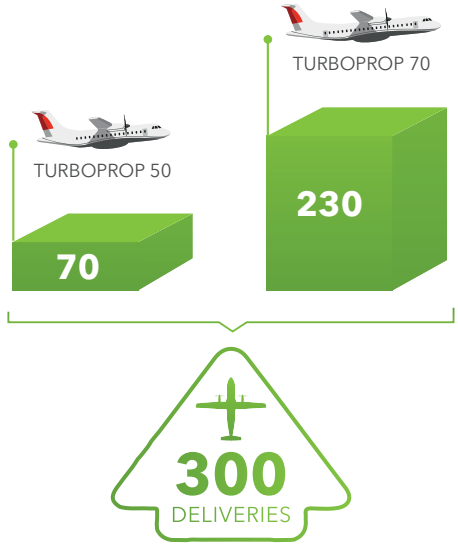
FOCUS ON SOUTH ASIA

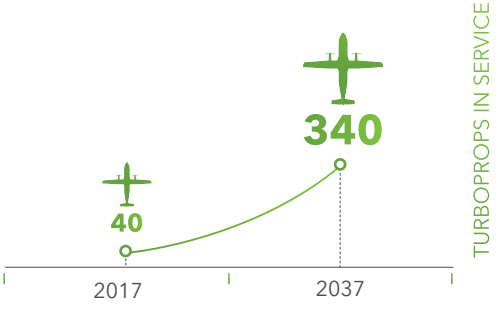




- With some of the fastest growing markets, route creation is crucial to enhance connectivity and support economic growth in the region.
- Turboprops are the perfect tool for this, allowing affordable and sustainable operations on thin markets and from challenging airfields.

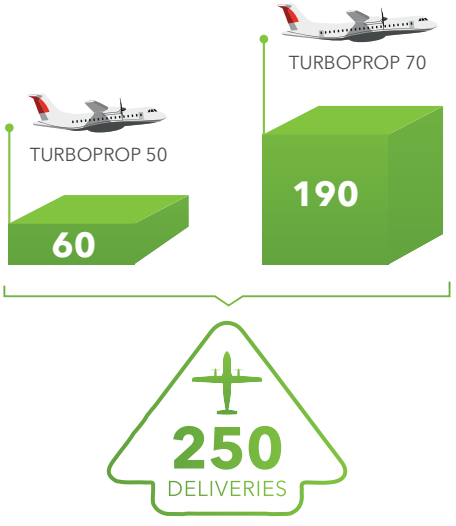
FOCUS ON CHINA





- Regional market is at an early stage of development with an inefficient use of large capacity aircraft generating the extensive need for public subsidies.
- Chinese government encourages the development of regional connectivity which will result in the creation of new routes.

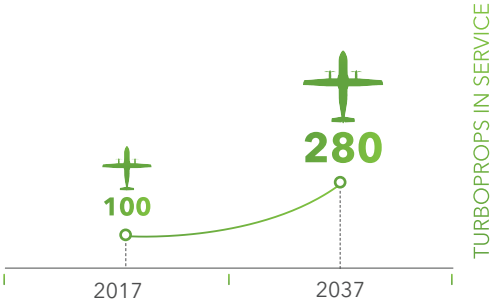
FOCUS ON CENTRAL EUROPE, RUSSIA & CIS



+2.2%
GDP GROWTH

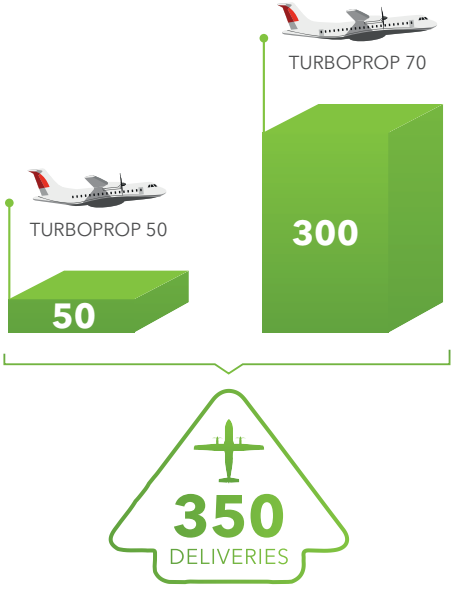
+10%
TRAFFIC GROWTH

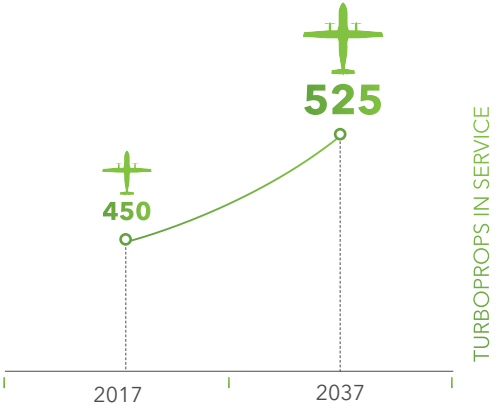
240
NEW ROUTES



- Stronger growth in emerging economies creates opportunities for increasing air traffic and better regional connectivity.
- Ageing current turboprop fleet will pave the way for a requirement for cost-efficient and high performance replacement aircraft.

FOCUS ON WESTERN EUROPE





+1.4%
GDP GROWTH

+1.2%
TRAFFIC GROWTH

160
NEW ROUTES

- Turboprops have the unique capability to access even the most challenging airfields, thus contributing to valuable point-to-point connectivity in a competitive market.
- Modern turboprops are the most cost-efficient replacement for the existing fleet as well as for upsizing the current 30 seat fleet.

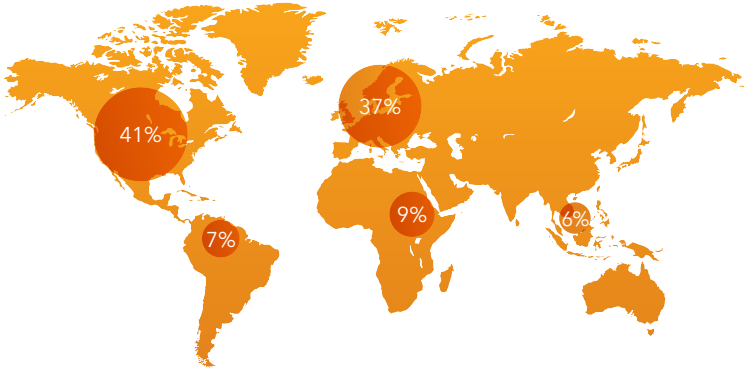
FREIGHTERS

WORLDWIDE

210 ATR FREIGHTER FLIGHTS PER DAY

SIGNIFICANT UNTAPPED OPPORTUNITIES IN EMERGING MARKETS

WORLDWIDE TURBOPROP FREIGHTER FLEET DISTRIBUTION 2017



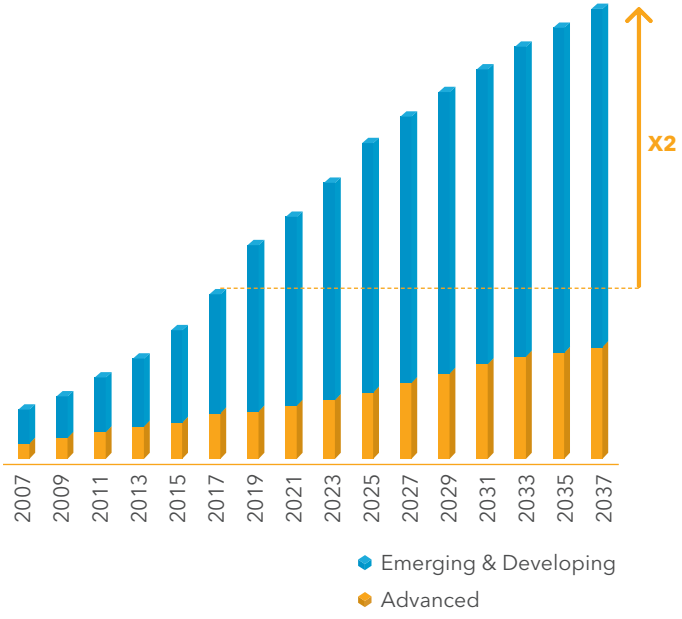
78%

of the **current turboprop freighter fleet** is flying in Europe and North-America

- There is still ample room for expansion in emerging markets (e.g. China, India, Brazil, South-East Asia).
- Turboprop freighters could efficiently contribute to regional economic development in these markets, be it as feeders in larger integrator networks or as a faster and more reliable alternative to surface transportation.

E-COMMERCE CONTINUES TO GROW

POPULATION WITH INTERNET ACCESS



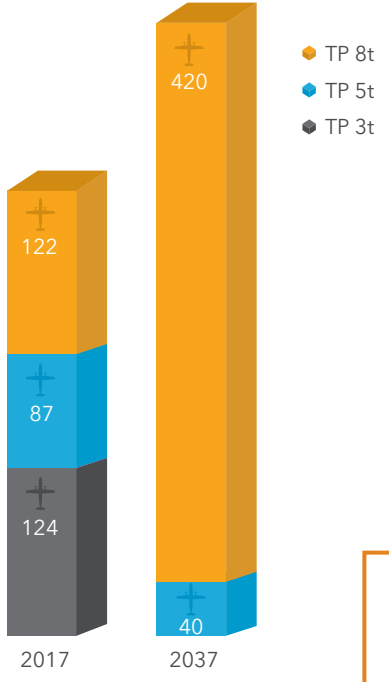
- Developing and emerging countries will see their share of Internet users double over the next 20 years, while also enjoying the bulk of population growth.
- E-commerce will continue to influence consumer habits, shaping worldwide cargo and logistics networks.
- Turboprop freighters have key role to play as a means of last mile delivery in a timely manner.

INFLUENCE OF FEEDSTOCK ON FLEET CAPACITY

TODAY'S FLEET	OPPORTUNITIES FOR FREIGHTER CONVERSION	TOMORROW'S FLEET
TP 3t	NO FEEDSTOCK — Down-gauge to 2t capacity / Up-gauge to 5t capacity	**0**
TP 5t	LIMITED FEEDSTOCK — Up-gauge to 8t capacity	
TP 8t	AMPLE FEEDSTOCK	

- The air cargo market is highly price sensitive and operators constantly seek the best economics. This explains the clear market preference for turboprops, which represent **96%** of the regional freighter fleet.
- The evolution of the turboprop freighter fleet will be determined by feedstock availability and market needs.

IN-SERVICE TURBOPROP FREIGHTER FLEET



460
FREIGHTER DELIVERIES

- Growing world trade together with the emergence of new markets will result in a **3.2% annual growth** over the next 20 years. This growth will translate into an increase in overall fleet size and upsizing of current aircraft gauge.
- The **8-tonne segment will become the reference** point for the market while 3-5 tonne capacities will significantly reduce due to a lack of feedstock.

SAFE HARBOUR STATEMENT

Disclaimer
This presentation includes forward-looking statements. Words such as anticipates, believes, estimates, expects, intends, plans, projects, may, forecast and similar expressions are used to identify these forward-looking statements. Examples of forward-looking statements include statements made about strategy, rampup and delivery schedules, introduction of new products and services and market expectations, as well as statements regarding future performance and outlook.

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- The outcome of political and legal processes, including the availability of government financing for certain programmes and the size of defence and space procurement budgets;
- Research and development costs in connection with new products;
- Legal, financial and governmental risks related to international transactions;
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