



Airbus Cargo Global Market Forecast 2011-2030

Airbus Global Market Forecast

→ Roles & objectives

Airbus Market and Product Strategy

Market Research and Forecasts



Assess market trends (demand) for our current aircraft

Impact : Production rates, design changes, financing, sales support, ...

Forecasting travel demand

Impact : Define generic aircraft designs, establish business plans, ...



Engineering

Finance

Programmes

Commercial

European Commission
(Alfa -Bird, Cleansky, ...)

Governments
(experts working groups)

International
Organisations

Agenda



- **GMF freight forecast methodology**
- Analysis of today's air freight market
- 20 year global freight traffic forecast
- 20 year freighter fleet forecast

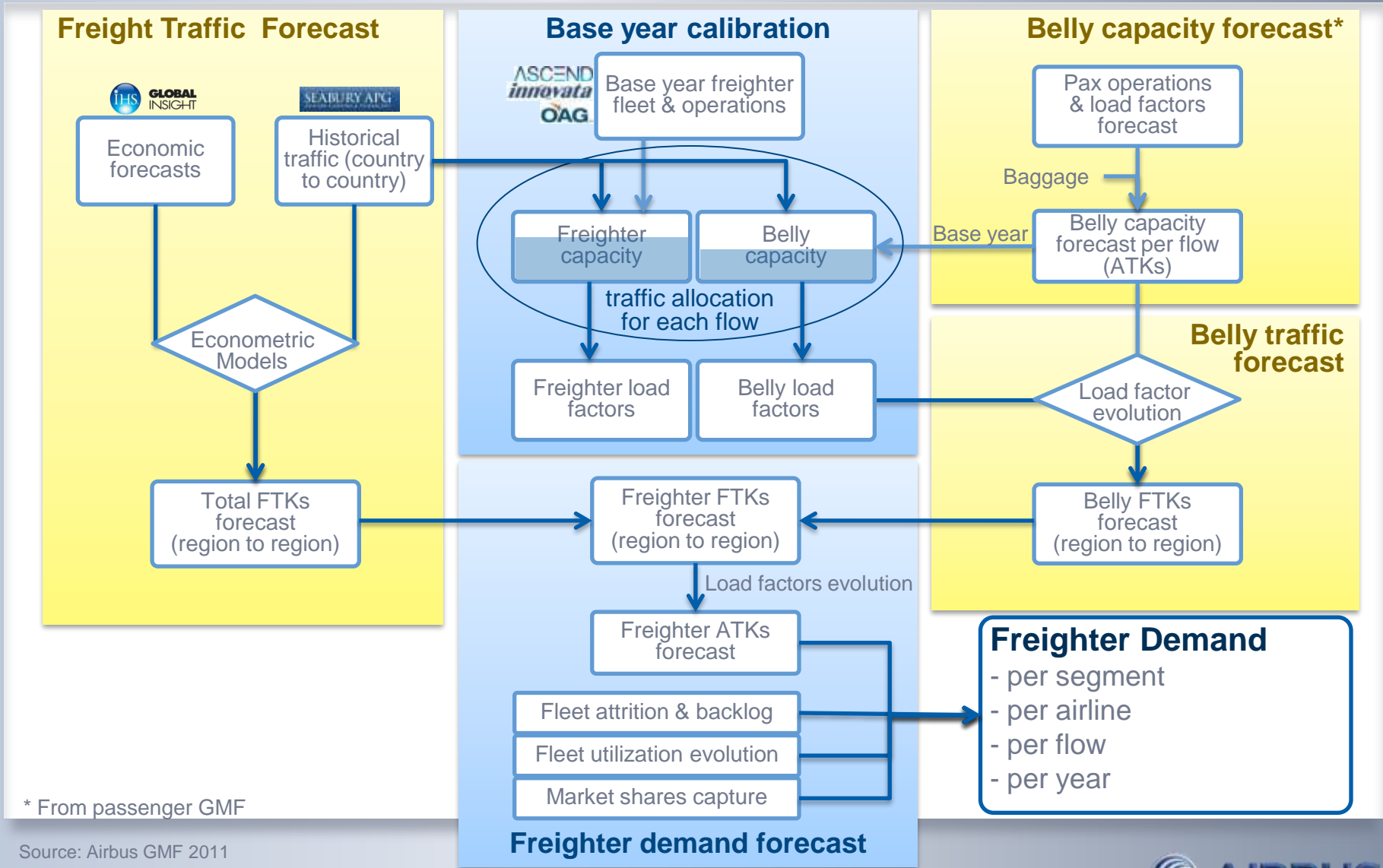
GMF freight forecast overview

- 20 years freighter aircraft demand forecast (jet freighters > **10 tons**)
- Traffic forecast modeling **150 distinct traffic flows**
- Fleet build-ups covering **207 freight carriers**
- Freighters fleet divided in **3 segments:**



Segment	Payload	Aircraft types in service
Small Jet Freighters	10 to 30 tonnes	BAe 146, DC-9, 727, 737, TU-204
Mid-Sized Freighters	30 to 80 tonnes	DC-8, 757, 767, 747 Combi, DC10, A300, A310, A330
Large Freighters	Over 80 tonnes	MD-11, 777, 747

Airbus freighter demand forecast process



Source: Airbus GMF 2011

20 year freight traffic forecast

Traffic forecast for 146 directional flows is based on selected economic variables

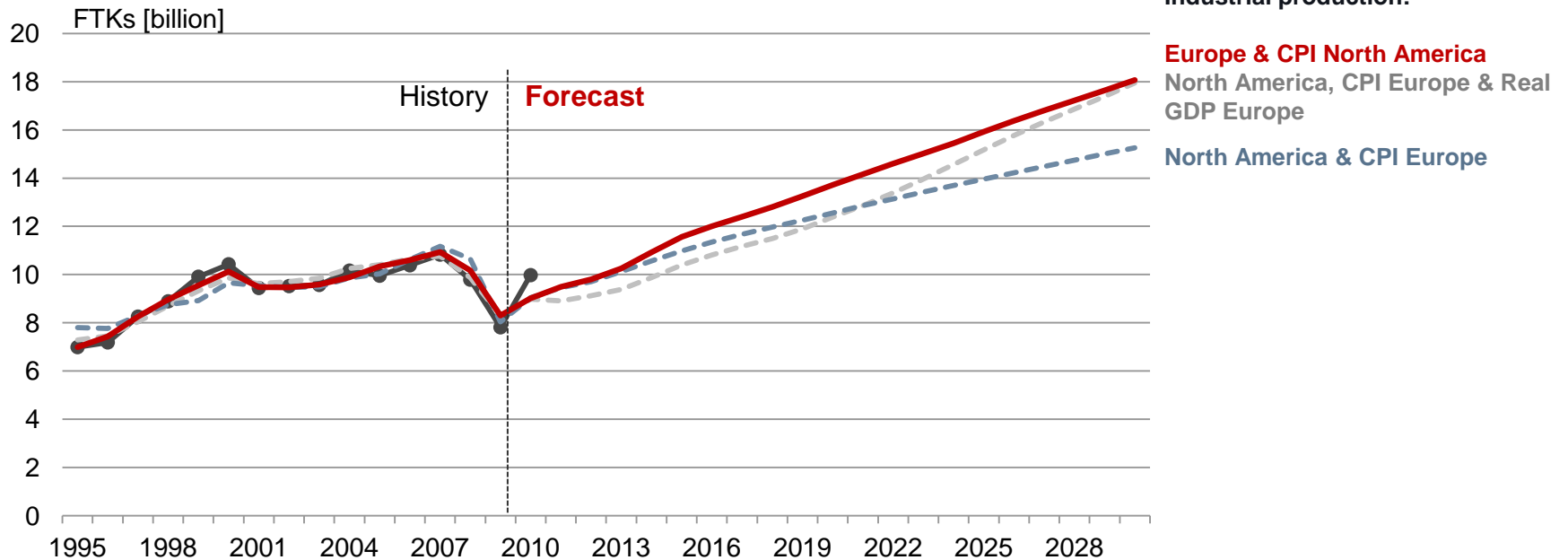


**GLOBAL
INSIGHT**

Data source



Choosing the right model (eg. Europe → North America)



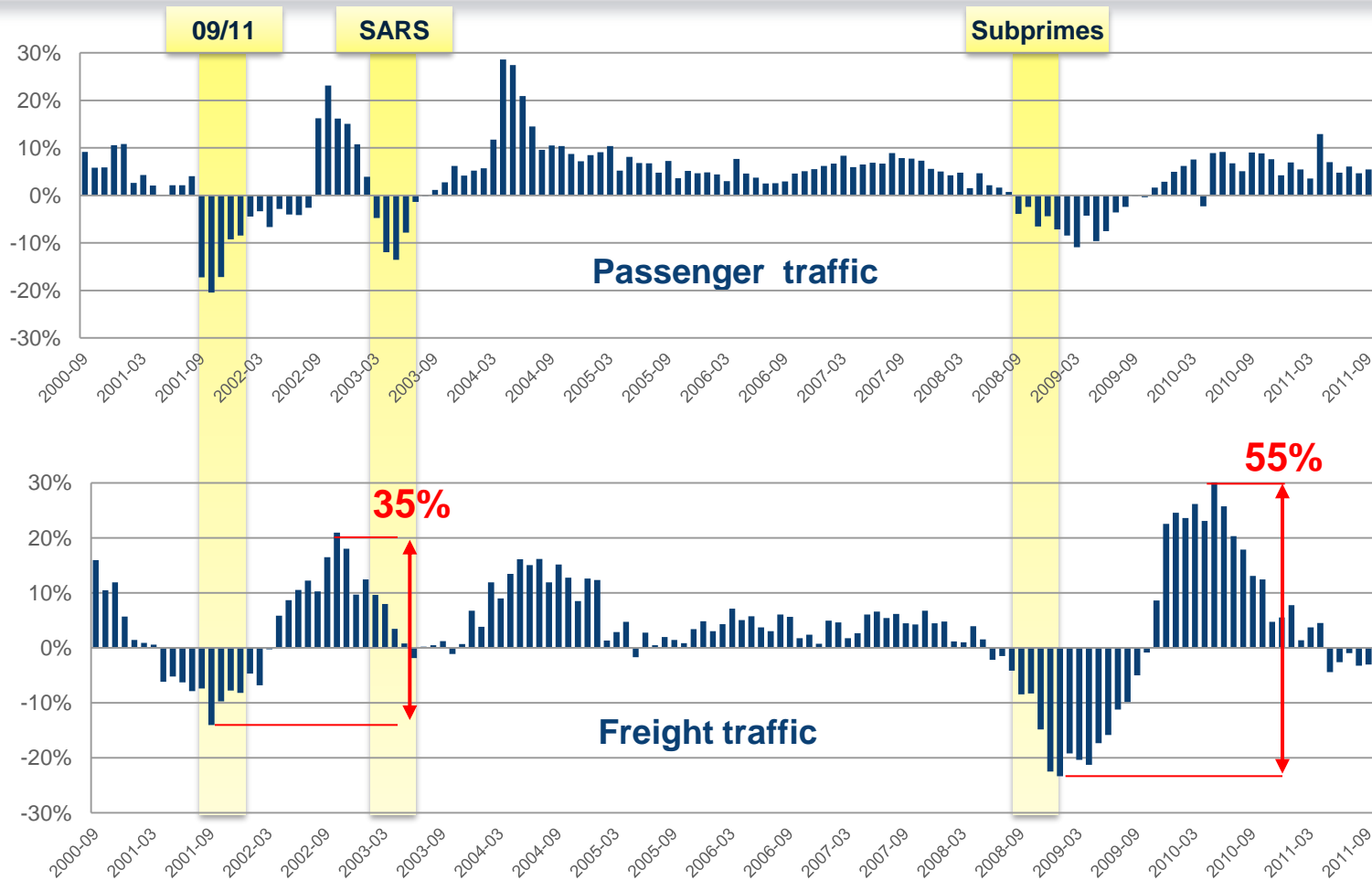
Source: Airbus GMF 2011

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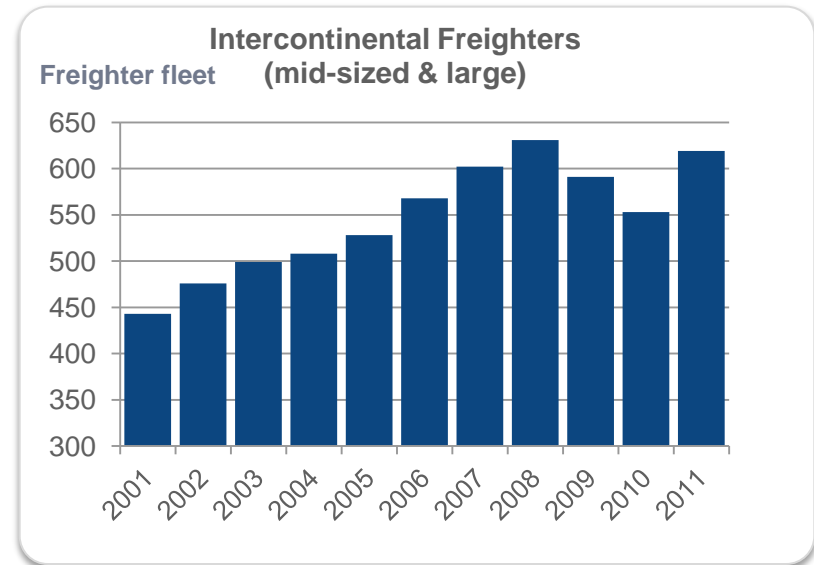
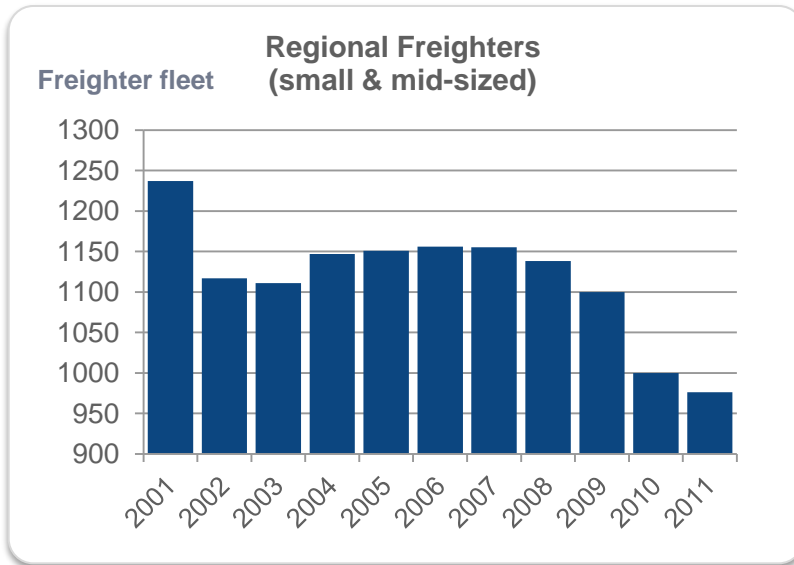
Air freight market is very volatile, but has proven resilient to the previous crisis



Air freight volatility has increased over past years

Source: International IATA + domestic ATA + domestic AEA. RPKs/FTKs year over year change

Freighter fleet evolution in the past decade



**Change in air freight environment drives shift
from small-jet to wide-body freighters**

Segment	Aircraft type in service	
Regional Freighters	Small and Mid-size	BAe 146, 727, 737, TU-204, DC-8, DC-9, DC10-10 757, 767-200, A300, A310
Intercontinental freighters	Mid-size & large	DC10-30, 767-300, DC10, A330, MD11, 777, 747

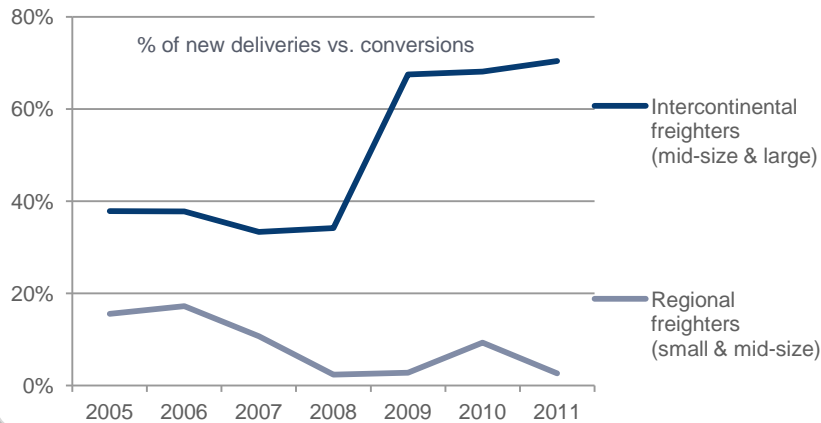
Source: Ascend

Market focusing on operational efficiency

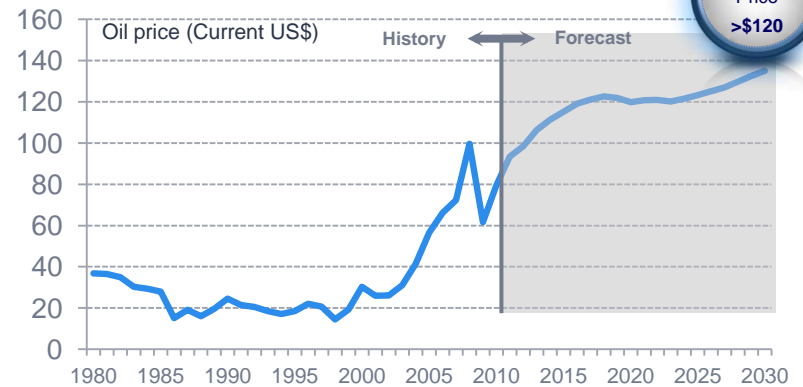
Operators are looking to optimize fleet efficiency by:

- Optimizing fleet **utilization**
- Using opportunistically **belly** capacity
- Flying **new aircraft** to improve **efficiency** on long haul routes

New deliveries ratio increasing for intercontinental freighters

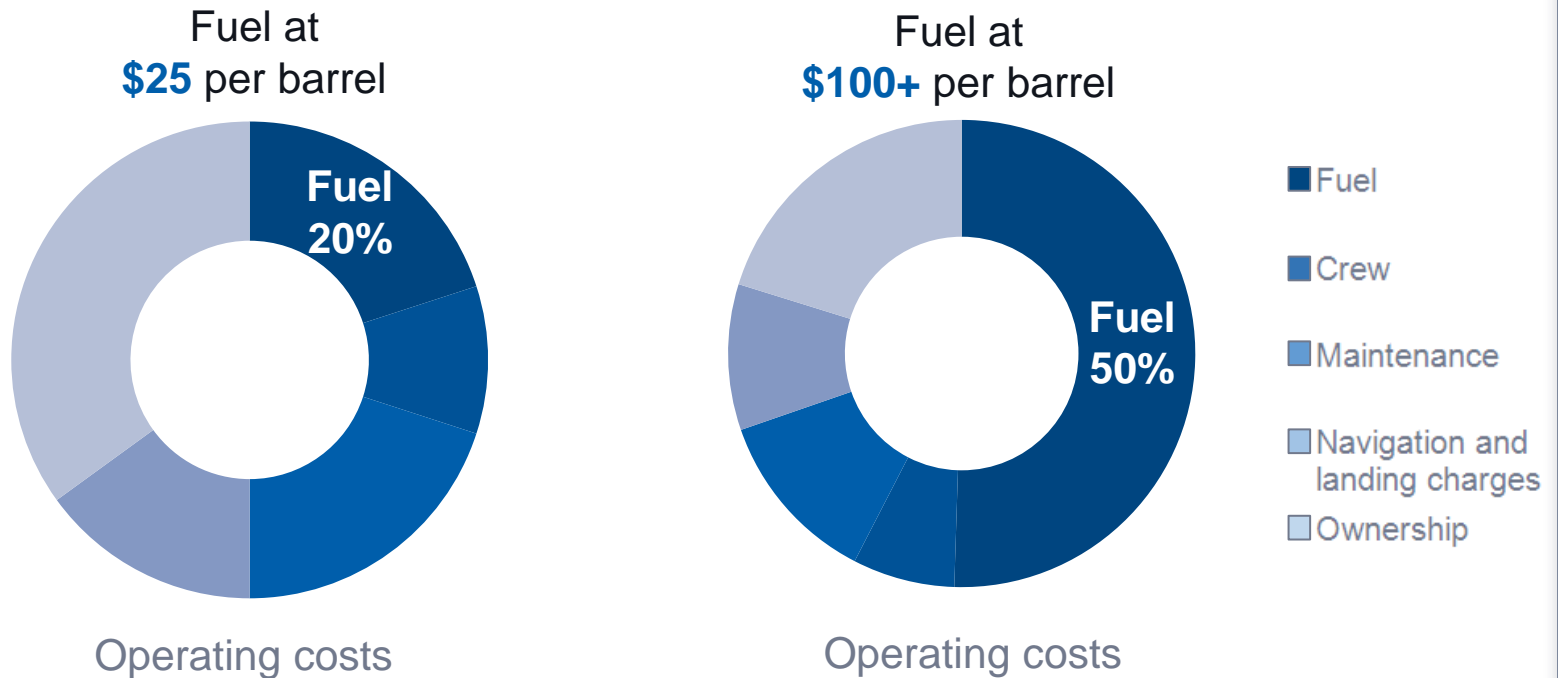


High oil price:



The age of cheap fuel is over

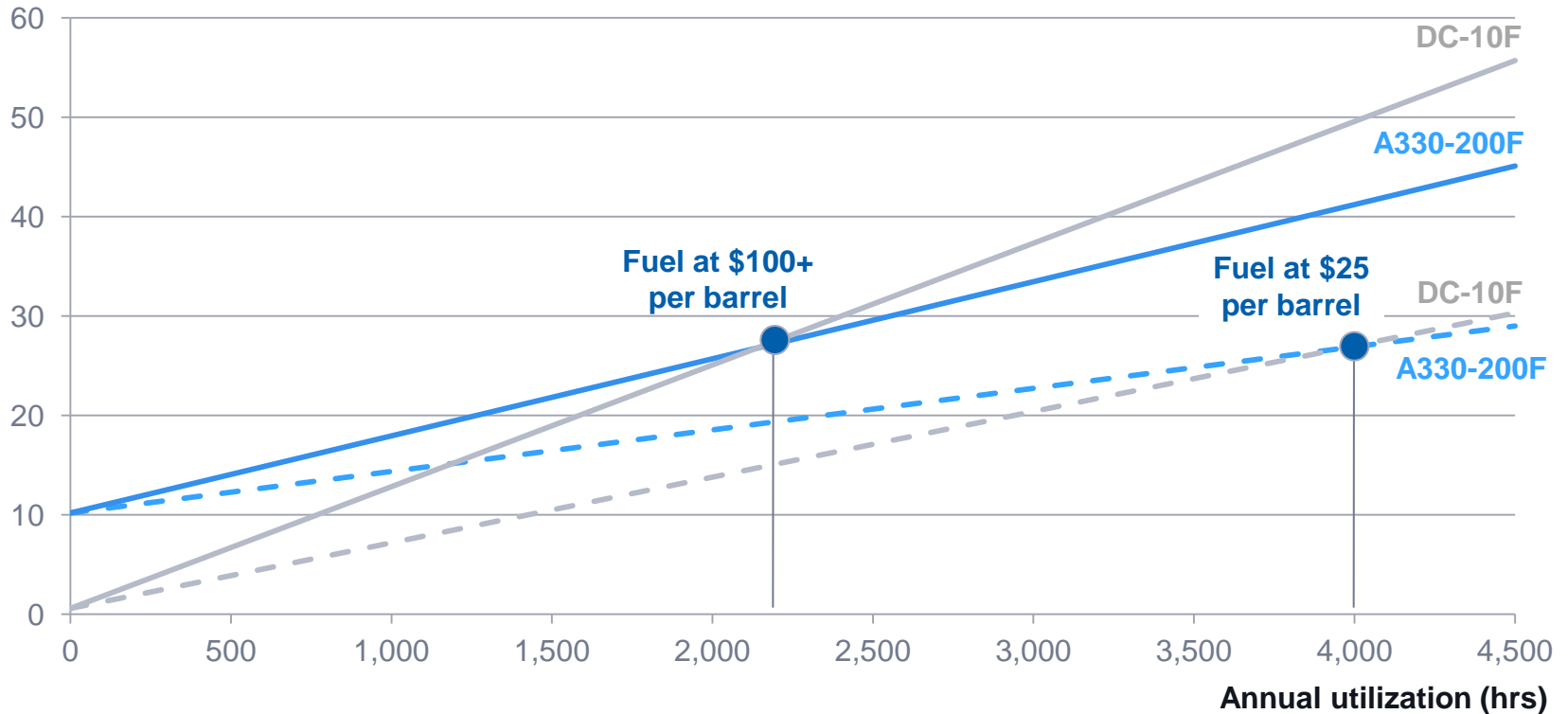
Fuel is the largest factor in operational efficiency



Cost of fuel drives need for fuel-efficient freighters

Cost of fuel drives the need for fuel-efficient freighters

Annual costs (mil \$)



The utilization threshold required to compensate higher acquisition costs gets significantly lower as fuel prices increase

2011 Freighter fleet regional distribution

WORLD

Operators	Fleet
207	1595

North America

Operators	Fleet
41	808

Central America

Operators	Fleet
7	21

South America

Operators	Fleet
17	60

Europe & CIS

Operators	Fleet
48	288

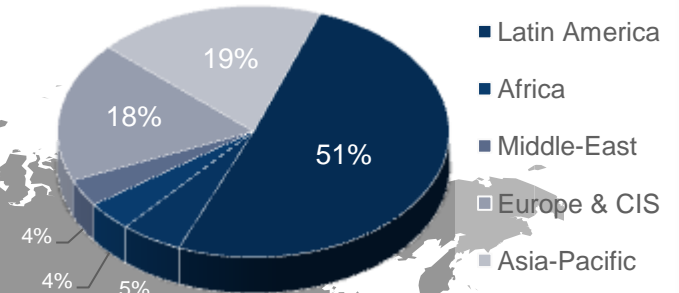
Middle East

Operators	Fleet
14	56

Africa

Operators	Fleet
31	61

Fleet per region



Beginning 2011, jet freighter >10 tons

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- **20 year global freight traffic forecast**
- 20 year freighter fleet forecast

Freight traffic will nearly triple over the next 20 years

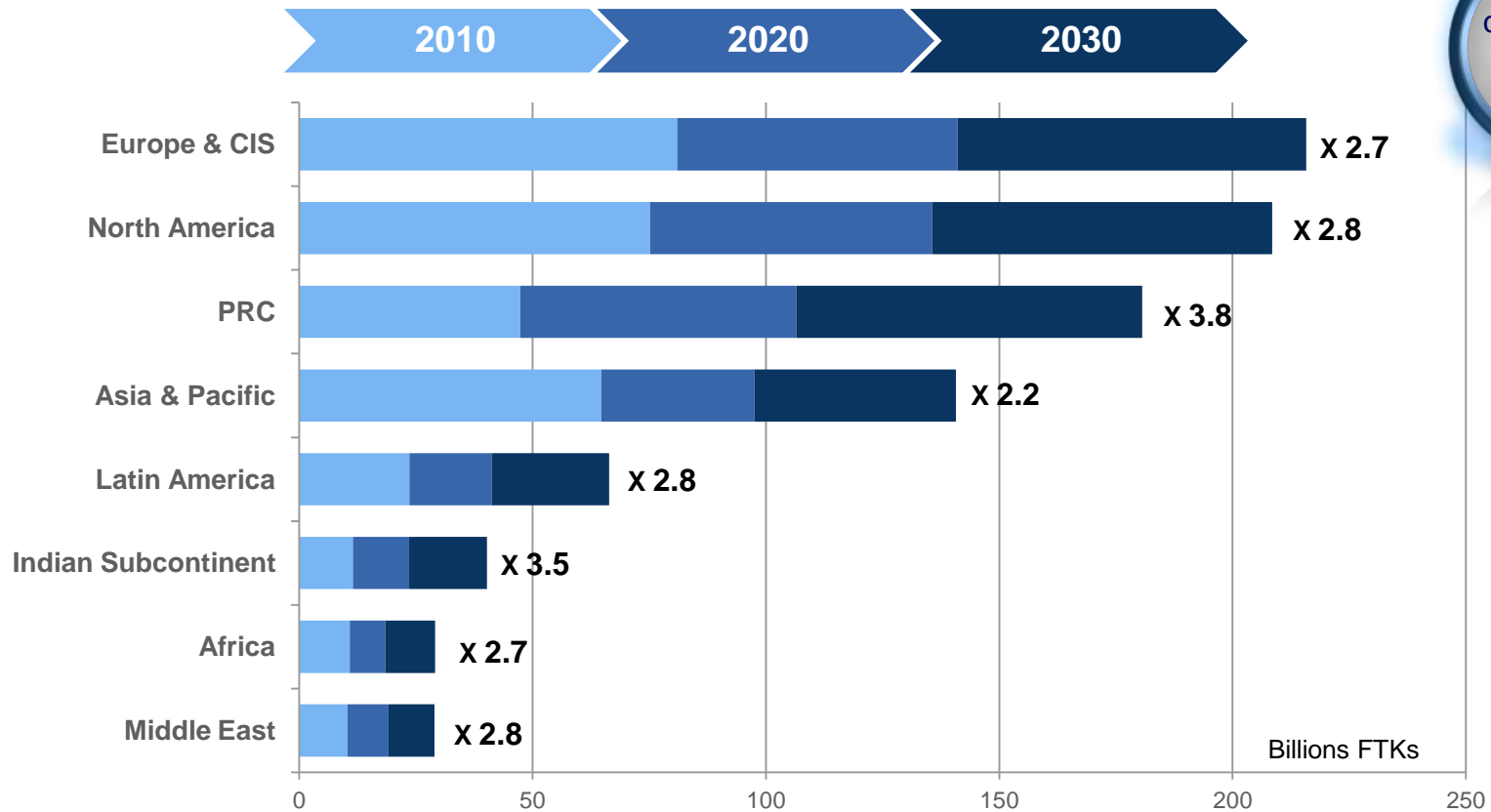


Source: Airbus GMF 2011



Intercontinental air freight traffic will grow nearly threefold in the next 20 years

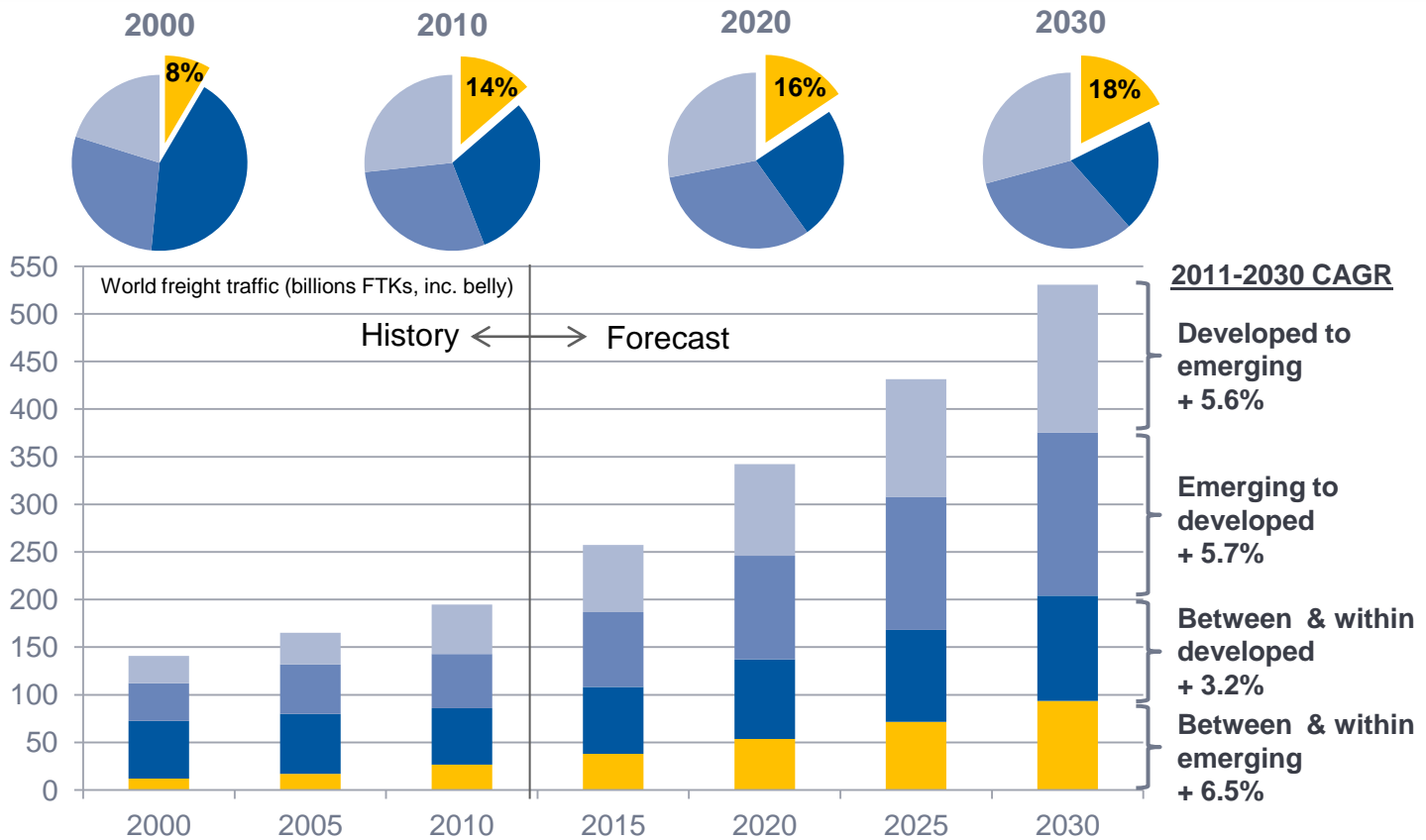
Intercontinental air traffic flows (all flows from & to the region)



Inter-continental traffic CAGR: + 5.3%

Air freight is a key enabler for a global world

Emerging markets will drive growth...



... and therefore demand for dedicated freighters

China is sowing seeds for air freight development within emerging areas

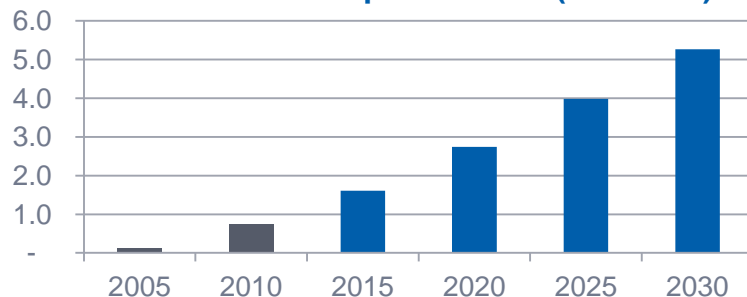
Domestic express freight in China

is ready to take off, together with:

- The sharp and continued increase of Chinese wages
- The development of Western China
- The booming of Chinese e-commerce,
- The ambitious airport infrastructure development plans

→ We expect China express traffic to grow **over 10% CAGR** in the next 20 years:

PRC domestic express traffic (bn. FTKs)



China opening new markets

for air freight within emerging areas, through massive investments in emerging countries (Africa, Eastern Europe, Indian sub continent, ...)

China & Africa relationship is a clear example:

China provides infrastructure, funding and workforce, preparing ground for efficient business relations and new markets

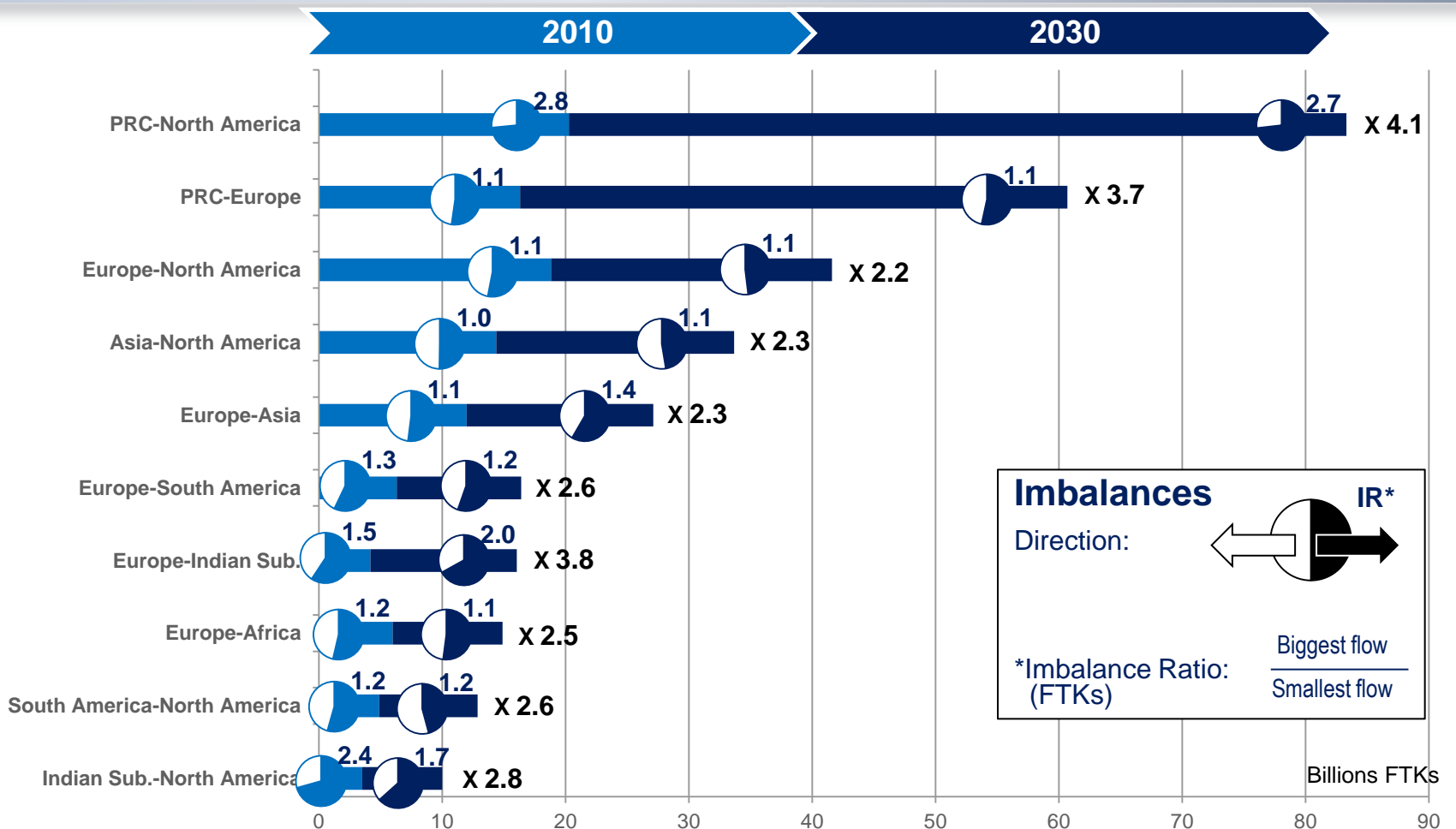


In return, China obtains privileged access to African market & resources:

- Africa provides nearly one third of China oil needs
- Total trade between Africa & China exceeded US\$100bn in 2010, growing over 10 folds in the last decade
- China began to import African-manufactured value-added goods, (e.g. processed foods & household consumer goods)

Such growth enablers are easily found across Asia, Middle East, India and Latin America !

Continued imbalance on main intercontinental flows



Market imbalances will continue to challenge operating economics

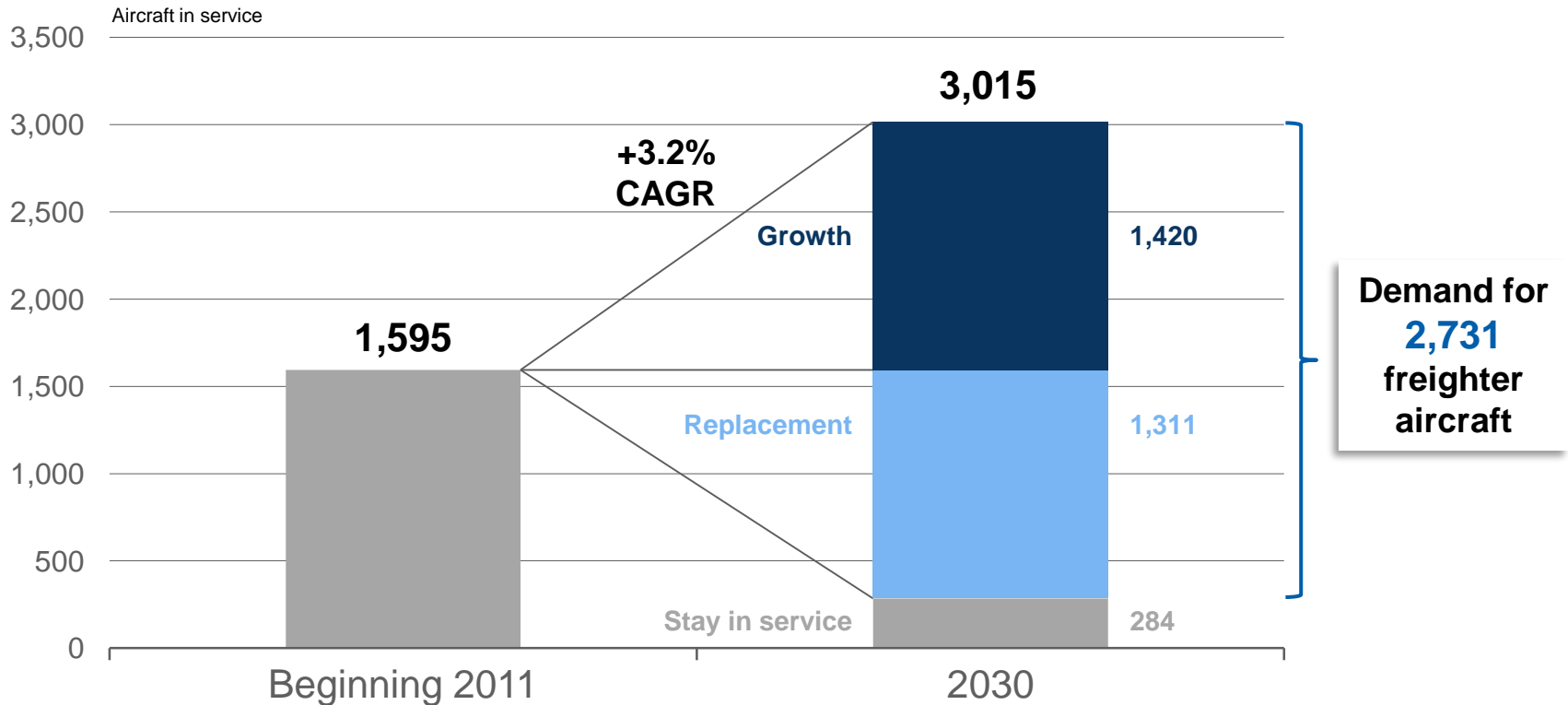
Agenda



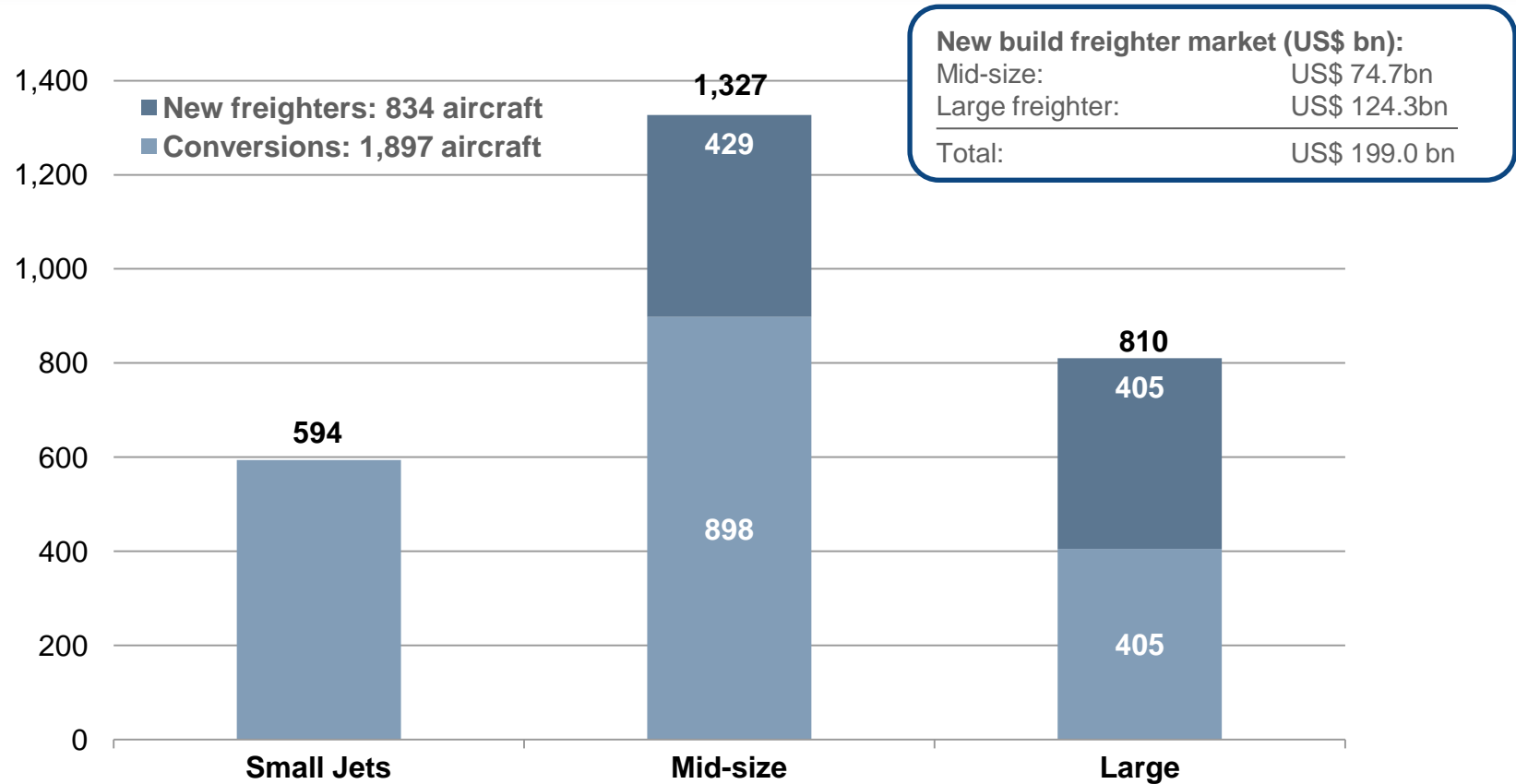
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- **20 year freighter fleet forecast**

Freighter fleet in service to nearly double in the next 20 years

Freighter aircraft fleet composition in 2030 vs. beginning 2011

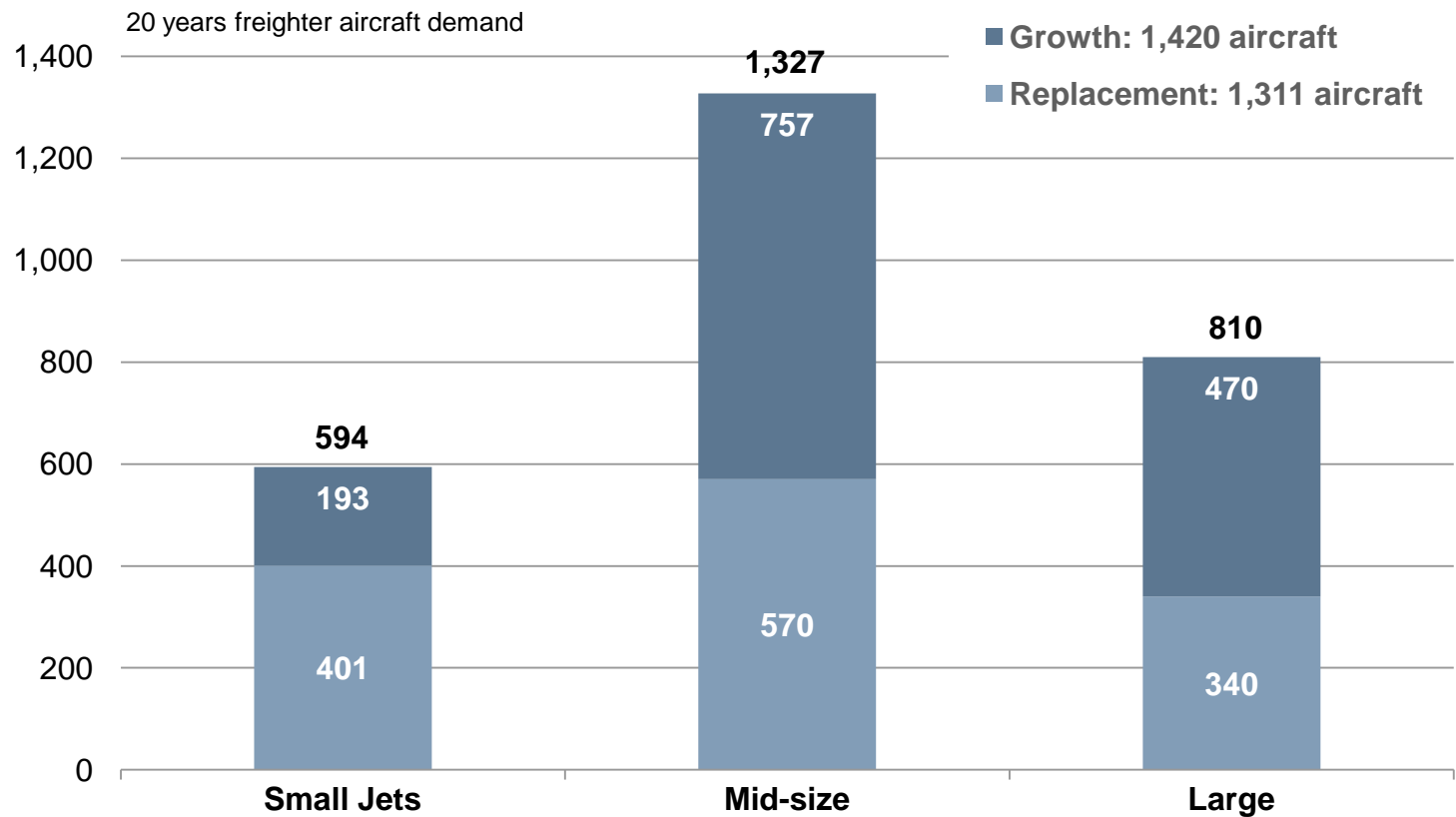


20 year demand for more than 2,700 freighter aircraft



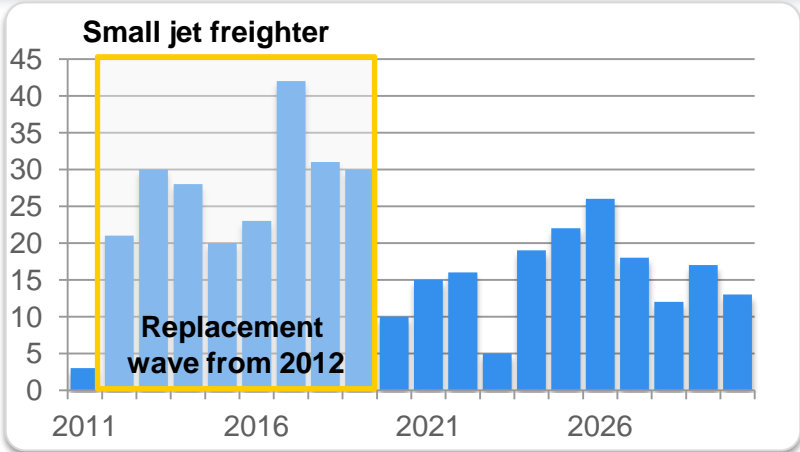
Mid-size freighters remain the core of the market

Growth and replacement needs drive demand for freighter aircraft



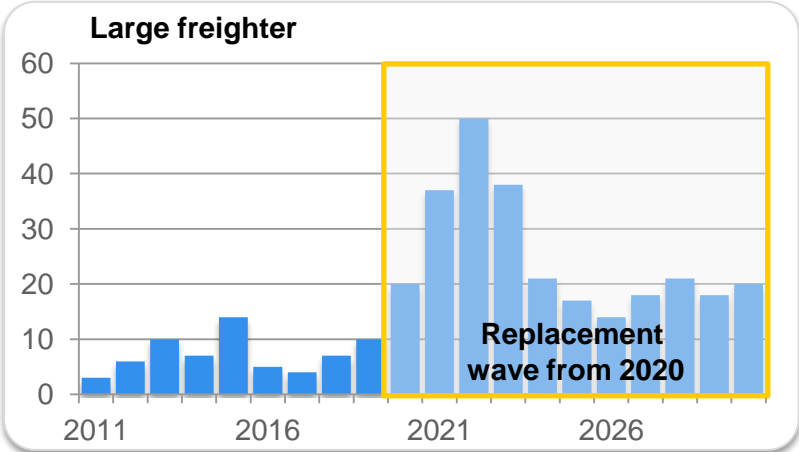
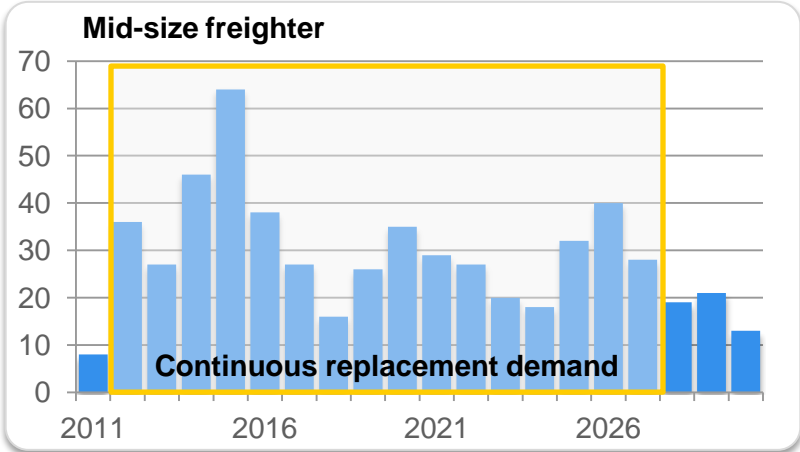
Replacement will account for nearly half of the demand

High replacement needs in the coming years



Average fleet age:

Small jets:	28 years
Mid-size:	21 years
Large:	14 years



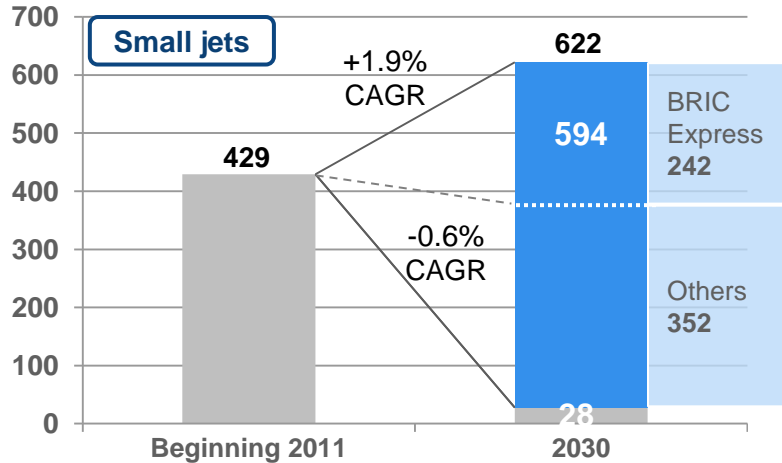
650 freighter aircraft will retire in the next 10 years

Source: Airbus GMF 2011



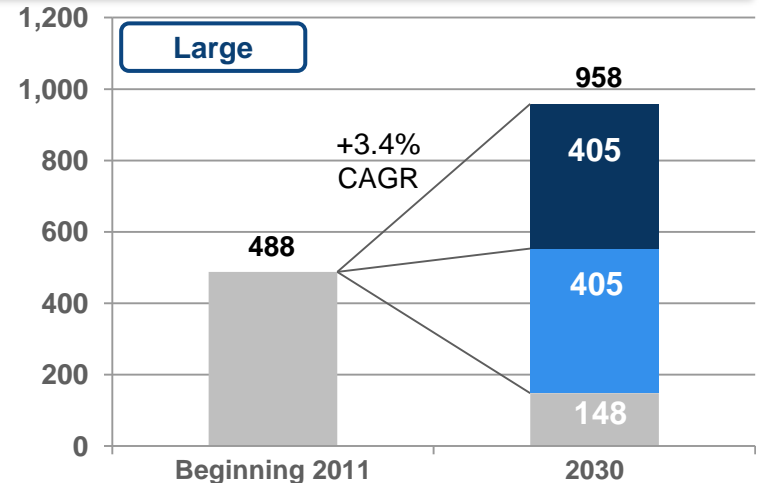
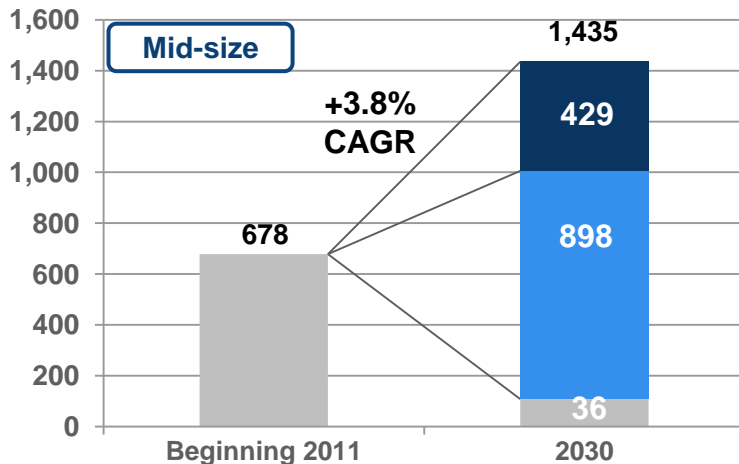
2011-2030 freighter fleet evolution

20 years fleet growth per segment (in service freighter aircraft)



- Small jet demand is mainly driven by Express development in PRC, India and Brazil
- Twin aisle A/C growth mainly driven by world exports, in particular growing imports from south countries

■ Retained in service ■ Conversions ■ New



20 years freighter demand & 2030 fleet per region

2030 Fleet, 20 years fleet growth & demand by airline domicile

WORLD +89%	
Demand	Fleet
2,731	3,015

North America +83%	
Demand	Fleet
1,374	1,475

Central America +70%	
Demand	Fleet
30	36

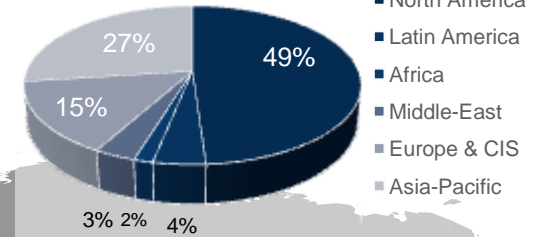
South America +53%	
Demand	Fleet
86	92

Europe & CIS +75%	
Demand	Fleet
400	446

Middle East +81%	
Demand	Fleet
89	102

Africa -23%	
Demand	Fleet
46	47

2030 fleet regional distribution



Asia - Pacific +135%	
Demand	Fleet
706	817
<i>PRC: 409</i>	<i>PRC: 442</i>
<i>Ind.sc:101</i>	<i>Ind.sc:101</i>

Asia-Pacific (i.p. China) is leading the growth for dedicated freighter aircraft

Freighter GMF 2011–2030: main highlights

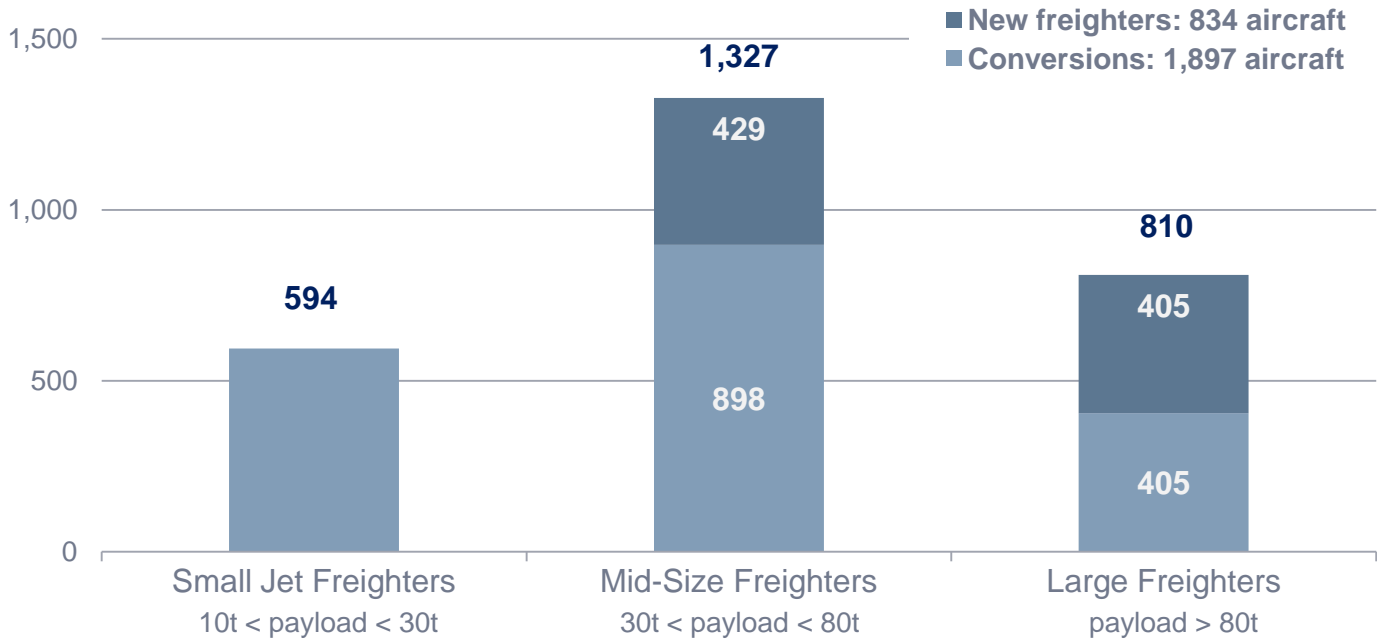
Traffic 5.1% CAGR

Freight traffic to almost triple in the next 20 years

Fleet 3,2% CAGR

Freighter fleet to almost double over the period

UNITS:
20 years demand for freighter aircraft



Continued strong traffic growth, led by emerging countries, will drive demand for 2,700 freighters, of which more than 800 will be new build



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