

**AVIATION**  
BENEFITS  
BEYOND  
BORDERS

## Aviation Update

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16<sup>th</sup> IEA-IETA-EPRI Workshop  
19 October 2016, Paris



## Aviation update

- Historic decision by 39<sup>th</sup> ICAO Assembly on 6 October 2016
- Culmination of several years collaborative action by States, industry and civil society
- Ensures aviation industry can continue to grow sustainably



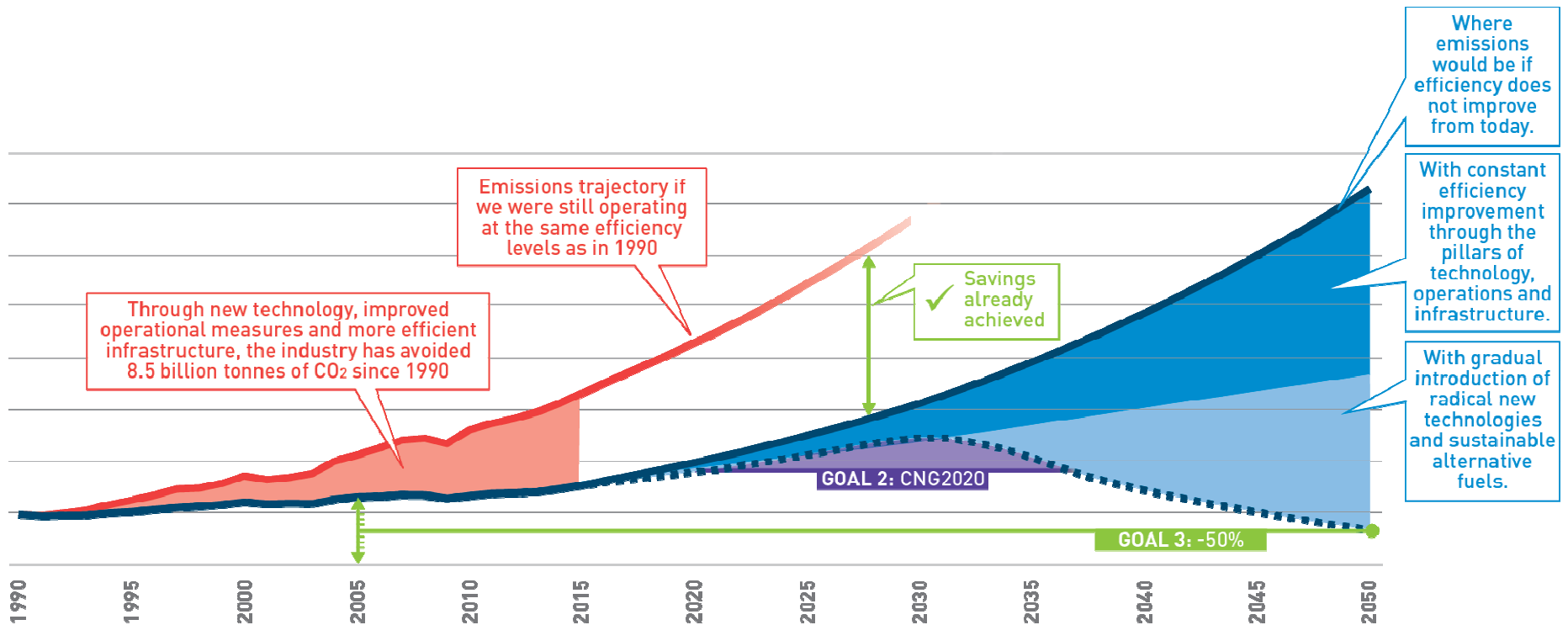


# Tackling the climate challenge



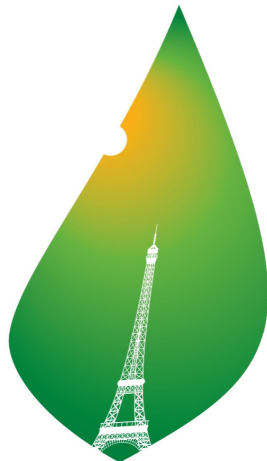


# MARKET-BASED MEASURE





# Paris Agreement provided momentum to ICAO discussions



**PARIS2015**  
UN CLIMATE CHANGE CONFERENCE  
**COP21·CMP11**

- Paris Agreement expected to enter into force from 2020
- Based on 'bottom-up' principle through INDCs
- Secures use of market instruments for climate action
- Leaves aviation and shipping out – to be progressed through ICAO and IMO





# Aviation's global market-based measure has been agreed



## Historic decision at ICAO Assembly

Nearly all 191 ICAO States supported 'CORSA'

## Industry was instrumental in agreement

Seven years since industry set goals and started pushing for a global MBM





# Aviation's global market-based measure has been agreed



- Addresses increase in CO<sub>2</sub> emissions from international civil aviation above 2020 levels
- The market-based measure applying to CO<sub>2</sub> emissions from international aviation
- Complements a broader package of measures to achieve CNG2020
- Phased-implementation to address principles of Common but Differentiated Responsibilities (CBDR) and Special Circumstances and Respective Capabilities (SCRC)





# Why did the industry support such action?

**CLIMATE ACTION TAKES FLIGHT**  
30 September 2015, Geneva

Dear Governments,

**A LETTER FROM THE COMMERCIAL AVIATION INDUSTRY ON CLIMATE CHANGE**

One year ahead of the 39th International Civil Aviation Organization (ICAO) Assembly and as governments prepare to meet in Paris for the crucial COP21 climate change negotiations, we reaffirm our commitment to reduce aviation's contribution to climate change. As a result of billions of dollars of investment and collaborative action already taken by the industry, a passenger today produces half the CO<sub>2</sub> per kilometre flown compared to 1990. This is significant progress. But we recognise that more needs to be done.

Many economies rightly wish to foster the vital connectivity for trade, investment and tourism that further development of air transport can bring. We must balance that task with the challenge faced by all industrial sectors to reduce emissions. Aviation already supports around 60 million jobs, a third of global trade by value and half of all international tourists. Our mission is to continue to provide these benefits, particularly in the developing world, whilst cutting CO<sub>2</sub> emissions.

As leaders in the aviation industry and the global business community and as the first global transport sector to set carbon-reduction goals, we have been engaged in impressive cross-sectoral climate action. Our goals are to:

1. improve the fuel efficiency of the world fleet by an average 1.5% per annum, a goal we will achieve by 2020;
2. stabilise net aviation CO<sub>2</sub> emissions at 2020 levels through carbon-neutral growth; and
3. halve aviation's net CO<sub>2</sub> emissions by 2050, compared with a 2005 baseline.

These have been matched by action across the sector in four key areas:

- **Technology and sustainable alternative fuels:** over a trillion dollars has been invested in research and development of new aircraft since 2009 and the industry has fostered a new alternative fuel sector.
- **Operations:** through countless measures being implemented by the industry, the efficiency of aircraft already in the fleet is continually being improved.
- **Infrastructure:** airports are implementing efficiency measures on the ground to improve the efficiency of aircraft already in the fleet.
- **Market-based measures:** the aviation industry is committed to a global market-based measure to be developed through ICAO and in place from 2020. In the industry's view, this will be the swiftest and most effective approach.

**Today we call on governments to support efforts towards realising these goals.**

This support must take place through a range of actions: air traffic management modernisation; support for research into new technology, operations and sustainable alternative fuels; and the right policy framework to help accelerate the availability of sustainable aviation fuels. These measures should be undertaken as part of a smart regulatory environment which encourages development as part of broader government economic growth policy, coordinated with other sectors to bring global benefits in a way that avoids unintended negative consequences.

that will, for the first time, be a result of the joint effort of the industry and civil society. It is one to which the industry is committed. Please visit the website [www.icao.int/aviation-climate](#) for more information.

**And L. Conner**  
President and CEO  
**DEING**

**alo Silva**  
President and CEO  
**IBRAER**

**A COMMITMENT FROM INDUSTRY TO ACTION ON CLIMATE CHANGE**  
(across: **technology** and **alternative fuels**; **operations**; **infrastructure** and a **market-based measure** to close the gap between growth and a cap on emissions).

**DESIRE TO AVOID A PATCHWORK OF WORLDWIDE MEASURES**  
These overlapping, uncoordinated mechanisms would bring extra cost and administrative burden to the sector.





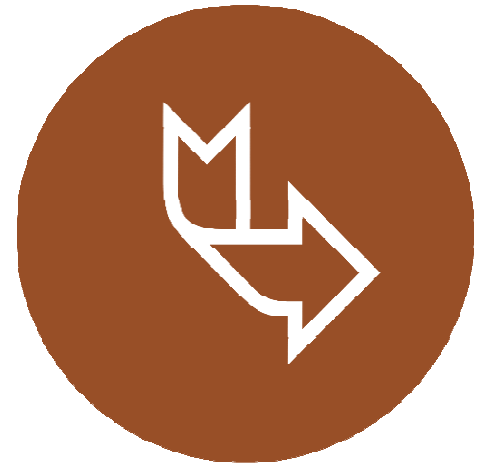
## ICA O had considered three MBM options



**Global levy**



**Global emissions  
trading scheme**



**Global offsetting**



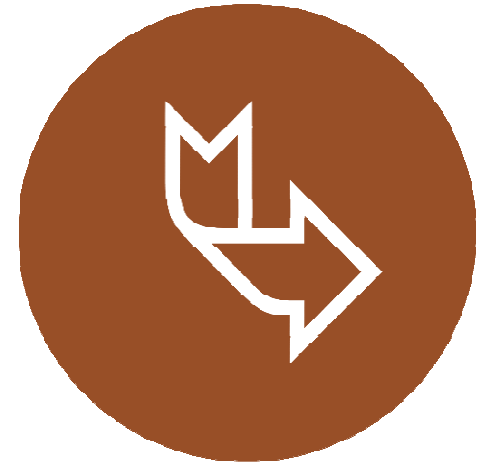
## ICA0 had considered three MBM options

### Offsetting:

- Ties in with existing UNFCCC infrastructure
- Is simple enough to be implemented by all countries by 2020
- More cost-effective than a tax or levy
- Less complex than an emissions trading scheme
- Provides environmental integrity through funding of offset projects worldwide

Global levy

Global emissions  
trading scheme

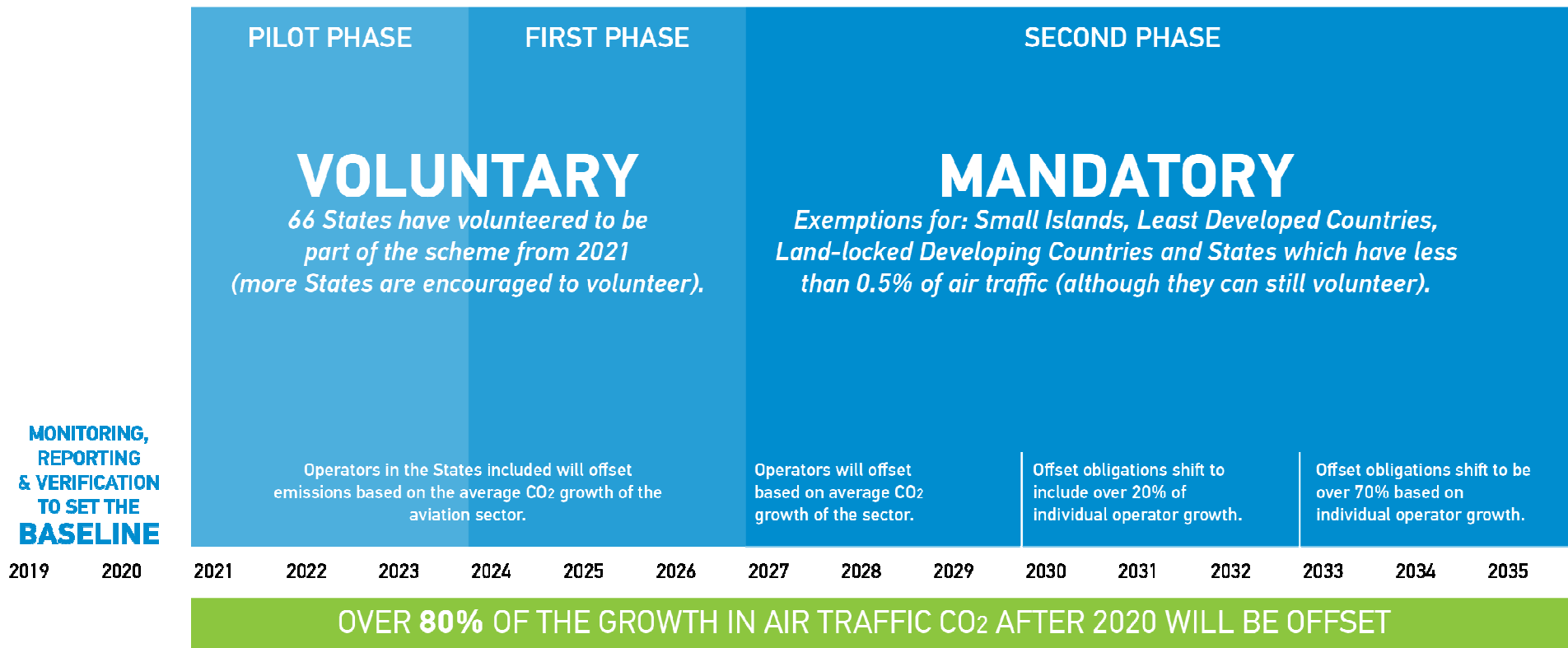


**Global offsetting**





# How does CORSIA work?





# Which States are included in the first (voluntary) phases?

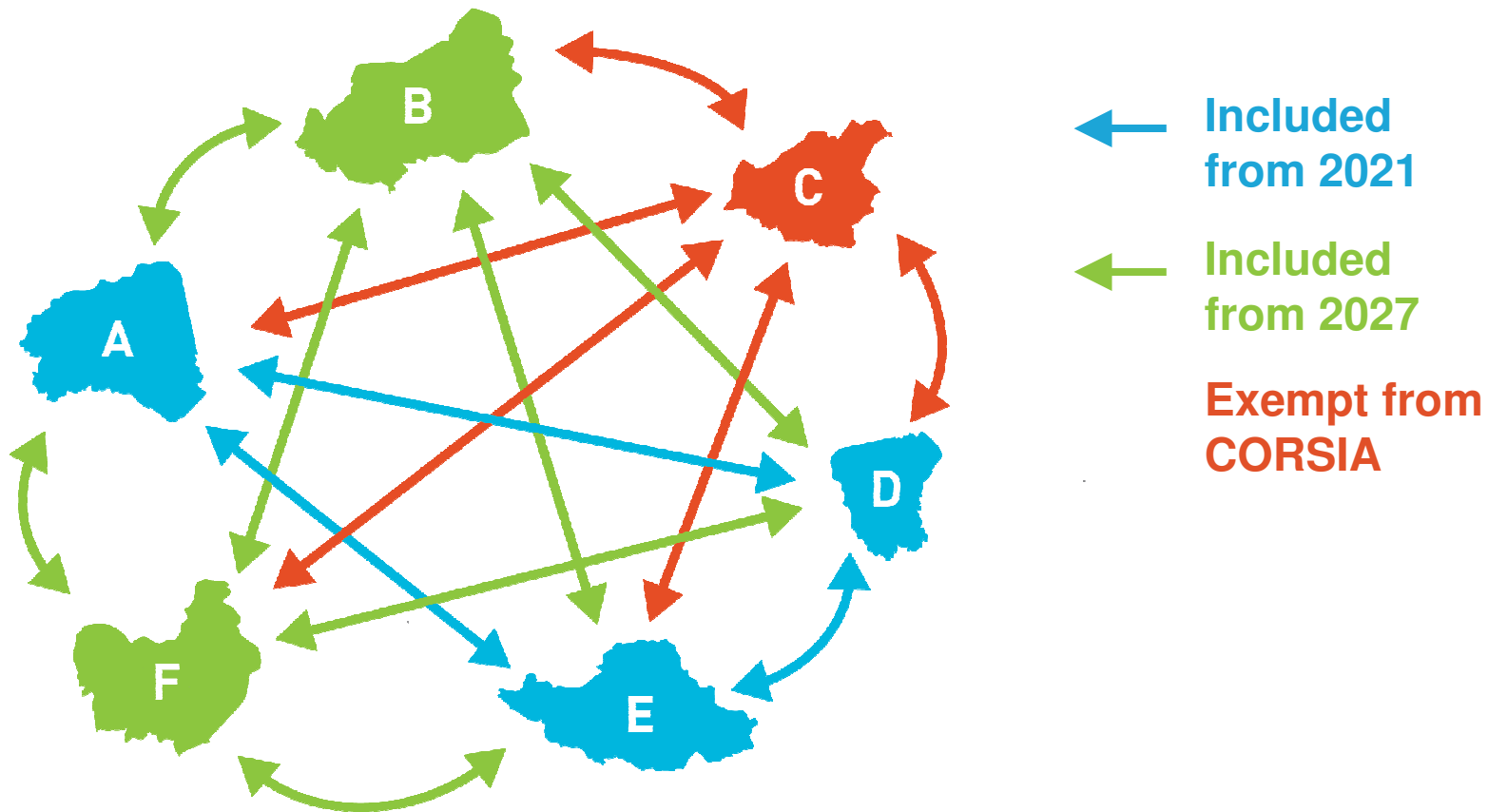


AS OF 12 OCTOBER 2016, **66 STATES** HAVE  
VOLUNTEERED TO BE PART OF CORSIA FROM THE START.





## Route-based approach means market distortion is limited





# Other considerations of the CORSIA

## TECHNICAL EXEMPTIONS

Humanitarian and  
fire-fighting flights

Small operators (under 10,000  
tonnes of CO<sub>2</sub> each year)

Aircraft under 5.7 tonnes

Military and State aircraft

## NEW ENTRANTS

Exempt for first  
three years of operation

or

unless they reach 0.1%  
of global RTKs

## TIMELINE FOR MRV

**2017:** ICAO to develop SARPs,  
guidance and templates

**2018:** States to implement  
national regulatory frameworks

**2019/2020:** monitoring, reporting  
and verification for baseline

**2021:** Scheme starts

## ONGOING ACTIONS

**Operators:** develop,  
verify and submit  
annual CO<sub>2</sub> reports

**States:** verify reports  
and transmit data to  
ICAO

**ICAO:** 3-year reviews  
undertaken by  
Council / Assembly

**Operators:** Surrender  
offsets at least every  
3 years





# How much will the CORSIA cost?

**CORSIA**  
CARBON OFFSETTING AND  
REDUCTION SCHEME FOR  
INTERNATIONAL AVIATION

## HOW MUCH WILL CORSIA COST PER FLIGHT?

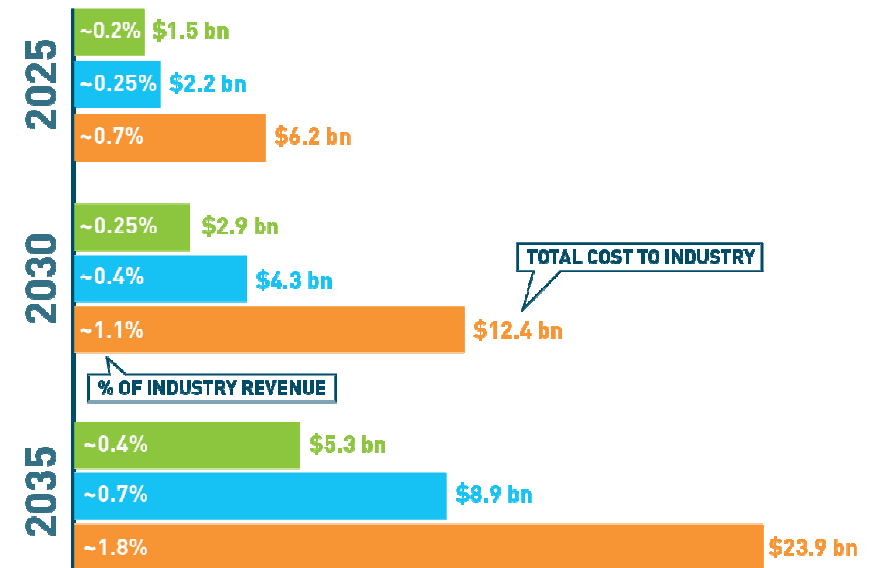
Sample flights (2030, operator growing at average industry growth rate)	Offsets Low estimate	Offsets High estimate	Fuel Cost, summer 2016 price	Fuel fluctuation (Cost of \$10/barrel increase)
Casablanca → Madrid <i>737-800</i>	\$51	\$131	\$1,656	\$278
Frankfurt → Addis Ababa <i>787-800</i>	\$578	\$1,497	\$18,920	\$3,172
Mexico → Buenos Aires <i>A350-900</i>	\$910	\$2,357	\$29,799	\$4,996
Dubai → Sydney <i>A380</i>	\$2,542	\$6,585	\$83,248	\$13,957

It is difficult to determine the exact per passenger price impact, as airlines must individually determine how to allocate the cost of purchasing offsets.

Airlines operate in a hyper-competitive industry and cannot always pass on their full costs to their passengers.

However, based on the estimates above, we do not expect the cost of the scheme to adversely impact traffic growth. It is an additional cost, but it is manageable.

ICAO projections of the cost of the global offsetting scheme to industry and percentage of industry revenues









## Next steps in the implementation of CORSIA by 2020

- **Capacity building** to help States / operators to prepare for MRV and offset purchasing
- Finalisation of two remaining technical standards and guidance material:
  - **Monitoring, reporting and verification** protocols
  - **Emissions unit criteria** to determine credit eligibility under CORSIA
- The **architecture** of the scheme: national and global registries





## Key take-aways from the industry

- Aviation sector is fully committed to climate action
  - Across all pillars: technology, operations, infrastructure
  - A market-based measure in the form of a global mandatory offsetting scheme is a vital part of that plan
  - Industry is already undertaking significant action
  - But is not enough to meet goals of industry, expectations of global community vis-à-vis Paris Agreement
- A well-designed single MBM to support our sustainable growth
  - To meet the needs of the world economy, responsibly





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