



# GUIDANCE ON EMISSIONS TRADING FOR AVIATION

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# Emissions trading basics



## CAP and TRADE

- Cap on total CO<sub>2</sub>
- Allowances to emit CO<sub>2</sub>
- Companies receive allocation of allowances
- Surrender allowances to cover emissions for each trading period
  - Need more? Buy on market
  - Have surplus? Sell on market
- Open trading preferred over closed trading
- Open trading considered more efficient than taxes/charges



# ICAO 35<sup>th</sup> Assembly



- Provide guidance for use by Contracting States, as appropriate, to incorporate emissions from international aviation into Contracting States' emissions trading schemes consistent with the UNFCCC process
- Guidelines should address the structural and legal basis for aviation's participation in an open emissions trading system





# Guidance on emissions trading



- New area
  - Living document
  
- Focus on aviation-specific issues
  - Aircraft are mobile sources
  
- International civil aircraft operations only
  - Not State aircraft - no customs and police services
  
- Identifies options, pro's and con's and offers potential solutions where possible



# Main guidance elements



- Accountable entities
- Emissions sources
- Emissions species
- International & domestic emissions
- Geographical scope (jurisdiction)
- Trading units (integration & linking)
- Types of trading systems
- Allowance distribution (benchmarking)
- Monitoring, reporting, verification & enforcement



# Accountable entities



- To identify the entity that is responsible for emissions from international aviation under the scheme
- Options
  - Aircraft operators
  - Fuel suppliers
  - Air navigation service providers
  - Airport operators
  - Aircraft manufacturers
- The guidance recommends that the aircraft operator be selected as the accountable entity





# Accountable entities



- Identification of the term 'aircraft operator' is required for the purposes of the guidance
- Indicators of who is the operator should be clearly specified and could include:
  - the ICAO designator used in the flight plan; or
  - the holder of an Air Operators Certificate (AOC) in which the aircraft is listed
- A clear default position is necessary to determine the final responsibility on objective grounds
  - E.g the owner of the aircraft



# Emissions sources (1)



- (1) To determine at which level of aggregation of aircraft emissions obligations under a scheme are applied
  
- Options
  - Individual aircraft
  - Aircraft types
  - Flight routes
  - All flights
  
- The guidance recommends that obligations under the scheme be applied on the basis of the total aggregated emissions from all covered flights performed by each aircraft operator included in the scheme





## Emissions sources (2)



- (2) To determine an 'inclusion threshold' establishing an adequate balance between emissions coverage and administrative burden
  
- Options
  - Based on aircraft weight
  - Based on number of aircraft operations
  - Based on total operator activity
  
- The guidance recommends that that States consider applying an inclusion threshold based on aggregate air transport activity (e.g. CO<sub>2</sub> emissions) and/or aircraft weight



# Emissions species



- To determine which aviation emissions 'species' are covered by the scheme
  
- Options
  - Carbon dioxide (CO<sub>2</sub>) emissions
  - Other non-CO<sub>2</sub> emissions
    - Including nitrogen oxide (NO<sub>x</sub>) emissions
  
- The guidance recommends that States start with an emissions trading scheme that includes CO<sub>2</sub> alone
  - While not precluding inclusion of other non-CO<sub>2</sub> aircraft emissions that contribute to climate change, as scientific understanding about their effects evolves



# International & domestic emissions



- To determine how emissions from domestic and international flights should be differentiated to help ensure consistency between the various approaches of States
  
- Options
  - ICAO definition
  - IPCC definition
  
- The guidance recommends that States use the IPCC definition of international and domestic emissions for the purposes of accounting GHG emissions as applied to civil aviation





# Geographic scope



- Options for inclusion of operators
  - Mutual agreement
  - Alternative to mutual agreement
- Options for the architecture of geographic coverage
  - Routes
    - initially including all routes or not
    - emissions from flights arriving or departing on predetermined routes or a 50/50 combination
  - Airspace
    - Limited coverage



# Geographic scope



- The guidance recommends that States consider that the ICAO Council in C-DEC 179/11 requested:
  - “that CAEP, in completing its draft guidance, adopt the same principle used in the drafting of other key elements of this guidance, by including the different options to geographic scope describing their advantages and disadvantages and start to address the integration of foreign aircraft operators under a mutually agreed basis, and continue to analyze further options”; and
  - “urged Contracting States to refrain from unilateral action to implement an emissions trading system for international aviation before the Council reports to the Assembly on its work to implement Assembly Resolution 35-5.”



# Trading units (integration & linking)



- To determine how to integrate international aviation emissions in a scheme in consideration of the current Kyoto accounting system
  - International aviation emissions are not covered in national KP inventories
  - The aviation sector will be a net buyer of allowances
  
- Options
  - Borrowing of AAU's (Kyoto allowances)
  - No allocation of allowances
  - Buy allowances above non-tradable baseline
  - Buy allowances above tradable baseline
  - Gateway
  - Clearing house





# Trading units (integration & linking)



## ➤ The guidance states that

- States will need to make a choice taking into account economic efficiency, environmental integrity, and equity and competitiveness issues; and
- States are advised to put in place an accounting arrangement that ensures that emissions from international aviation are counted separately and not – whether deliberately or inadvertently – against the specific reduction targets that States may have under the Kyoto Protocol



# Types of trading systems



- Discussion includes:
  - Cap and trade systems
  - Credit systems
  - Absolute and relative trading systems
  - Project based mechanisms such as CDM or JI under the Kyoto Protocol
  
- Different approaches to generate a baseline or a cap for aviation are discussed.



# Allowance distribution (benchmarking)



- To determine an efficient and equitable method for distributing emissions allowances between aircraft operators, using a benchmark parameter (i.e. one of three options)
- Options
  - A range of potential methodologies and parameters can be considered (i.a. using RTK, ATK)
- Where States choose benchmarking over grandfathering or auctioning, the guidance recommends that a benchmark parameter be designed that
  - focuses on emissions performance of aircraft
  - rewards previous investments in new technology
  - provides incentives to operate the most emissions efficient aircraft in the most efficient way into the future
  - avoids unintended distributional effects between different business models as much as possible.





# Monitoring, reporting & verification



- Determine appropriate methods to monitor, report and verify aircraft operator emissions to ensure the proper functioning and integrity of the scheme, taking into account the administrative costs
  
- Options for monitoring & reporting
  - Calculation based on actual trip fuel or modelling
  - Calculation based on flight movement data
  
- Proposal
  - Use and incentivize highest accuracy when possible (using actual data)
  - Where not possible, use consistent minimum standards (using modelled data)



# Monitoring, reporting & verification



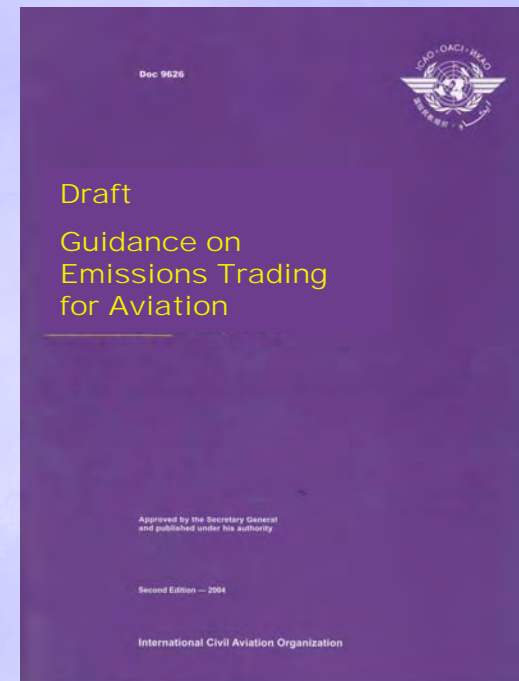
- Options for verification: using data obtained through
  - aircraft operators
  - air navigation service providers
  - aviation authorities
  - calculation
  
- Proposal
  - Verification carried out by an *accredited* and *independent* organisation to verify the reliability, credibility and correctness of the data
  - The State is responsible for the accreditation of such entities.
  
- **Note**
  - ICAO could be considered along with State accredited verification entities to facilitate or assist such verification



# Council conclusions



- ICAO Council agreed to
  - Adopt guidance as draft guidance
  - Add foreword by the President of the ICAO Council
    - clarifying that a majority of Council members indicated that inclusion must be on the basis of mutual agreement
    - addressing both the principles of 'non-discrimination' and 'common but differentiated responsibilities'
  - Publish guidance document prior to A36







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**Thank you**

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