

COMPARISON: Trading versus hybrid “Charge & Cap”

This note compares the new Hybrid approach to aviation emissions with the Trading options using the original criteria as considered by IACO in 2004 (CAEP-SG20041-WP/3).

Summary of System Design Elements for: Trading (ICAO, 2004) & Hybrid “Charge & Cap”					
Design Element	Option 1. Aviation Emissions Trading System with ICAO Guidance	Option 2A. ICAO Cap System for Airlines	Option 2B. ICAO Binding Dual Target System for Airlines	Option 3. ICAO Assisted Voluntary Emissions Trading System	Option 2007: “Charge & Cap” emission, fund climate change action
Basis for trading regime	Kyoto Protocol or successor agreement comes into force, w/ analogue to AAUs.	New stand-alone treaty or agreement created under ICAO auspices		Voluntary trading rules agreed to by participating entities	Kyoto Protocol and any project-based agreements (like CDM).
Form of emission instrument	AAUs or equivalent are created for international bunker fuels		Instruments are created under new regimes		None created; Aviation is a net buyer of emission certificates.
Aggregate environmental target	All international aviation emissions represented by AAUs	Commitments covering emissions along specified routes with origins and destinations in participating countries. Environmental benefits depend on targets agreed to and degree of participation		Environmental benefits depend on targets agreed to and degree of participation	Global emissions capped on an agreed level.
Overall structure: cap vs. credit	Cap (if countries have domestic trading systems and include aviation)	Allowance cap negotiated within ICAO	Binding upper target and non-binding lower target negotiated within ICAO	Binding cap agreed to voluntarily by participants	Charge to deliver binding emission cap and provide funding for adaptation and future mitigation.
Participants in the system (entities that must report and be in compliance)	Airlines licensed in countries that ratify Kyoto or successor climate agreement	Airlines based in those countries that sign agreement/treaty committing them to participate in the ICAO trading regime		Airlines that agree to participate in system)	All international flight operators for charges; the Fund for trading & global cap.
Role of ICAO	ICAO provides guidance on trade in aviation emission instruments, including domestic aviation	ICAO or designated Secretariat, creates allowances for international aviation and designs and administers trading system	ICAO, or designated Secretariat, designs and administers trading system and certifies the generation of credits	ICAO assists with design, facilitation, and information support.	Oversee the Fund, review and adjust the sub-funds structure (every 3 years).
Role of country governments	Parties to Kyoto Protocol receive AAUs and control domestic and international aviation via emissions trading or other system	ICAO member states sign onto agreement establishing authority for trading system, and carry out enforcement for airlines licensed in their countries		Little role, since the nature of the commitment means that agreement is enforced among participating entities	ICAO member states sign onto agreement allowing the collection of charges by the supranational Fund (through ATCs).
Openness and interaction with international instrument	Complete buying and selling with international system	Participants can use international instruments (or internal trades) for compliance For ICAO system allowances or credits to be sold outside system requires acceptance by outside entities.		Subject to the rules of other trading regimes, can purchase from but not sell into other regimes	Complete buying and selling of certificates except of national allocated units (selling of only previously acquired assets – none issued).
Basis for identifying participating entity (airline) commitments	Depends on system and whether (and how) airlines are included	Negotiated commitments covering emissions on specified routes	Negotiated dynamic binding targets covering emissions on specified routes	Absolute or relative baseline is basis for credit generation	No individual caps – impact internalized completely through emission charge.
Allowance distribution mechanism	Free distribution of allowances	Free distribution of allowances	n/a	Agreed to by participants	No allowances.

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Comparison and Evaluation of System Design: Trading (2004) & Hybrid “Charge & Cap”						
Evaluation Criteria	Option 1. Aviation Emissions Trading System with ICAO Guidance	Option 2A. ICAO Cap System for Airlines	Option 2B. ICAO Binding Dual Target System for Airlines	Option 3. ICAO Assisted Voluntary Emissions Trading System	Option 2007: “Charge & Cap” emission, Fund climate change action	
Environmental Results	Stringency of environmental target	Determined by the AAUs created for international aviation	Determined by stringency of overall cap and whether grows over time	Depends on aggregated stringency of upper targets for airlines	Depends on nature of voluntary commitments, but likely to be small	Determined by the cap (proposed to cap emission on the 2005 level till 2050).
	Certainty with which environmental goals are met	Because AAUs provide a cap, achieve overall environmental results with certainty	Overall cap is achieved with certainty throughout system	Because upper target is binding, achieves that goal with certainty	Because participation is voluntary, environmental achievements are uncertain	
Economic Growth and Contraction	Allows for growth in international aviation	Growth could be accommodated in the algorithm for distributing allowances to individual airlines as designated by countries, and in airlines’ ability to buy allowances to meet commitments	Growth depends on overall cap and on how allowances are distributed to individual airlines Can build growth into hard cap by adjusting over time or revisiting periodically, but can be difficult Can compensate for growth by buying allowances	Growth depends on how upper targets are determined for individual airlines If use dynamic target, can build growth into target directly for individual airlines Can compensate for growth by buying allowances	Growth depends on how targets are determined for individual airlines If use dynamic target, can build growth into target directly for individual airlines Can compensate for growth by buying allowances	Growth accommodated as each airline pays for actual emissions. Reductions achieved through the most cost-effective approach globally.
	Has potential for erosion of environmental benefits (“hot air”)	Environmental benefits can be reduced if sector faces dramatic economic downturn not built into cap	Environmental benefits can be reduced if sector faces dramatic economic downturn not built into cap	Less potential for benefits to be eroded, if lower target is stringent and depends on output or other variables	Less potential for benefits to be eroded, since excess emissions cannot be sold outside sector; may be affected by rules governing acceptable trades	Cap set low for a very long period – “hot air” very unlikely. Benefits also achieved in the funding areas: future mitigation & adaptation
Breadth of emissions coverage: geographic coverage of airlines and routes	Narrow—only international aviation emissions allocated to Parties to the Kyoto Protocol or successor protocol	International emissions along specified routes operated by airlines in whatever subset of ICAO member States chooses to participate in system—potentially global	International emissions by airlines choosing to participate in agreement—potentially global	International emissions by airlines choosing to participate in agreement—potentially global	Global; 99% of international flights.	
Administrative and Transactions Costs	Cost of administering the system for central authorities	Low because of allowances and supporting institutions and infrastructure will exist	Moderate because supporting institutions and infrastructure will have to be created	Moderate to high because of new institutions and infrastructure, the dual target s, and certification	Depends on structure but likely to be low moderate because of lower compliance and enforcement	Low: Collection through existing ATCs; disbursement centralized through three sub-funds.
	Transaction costs for participants	Moderate because of potential complications with domestic systems	Low because of allowances	Moderate because dual target requires dual accounting and some certification	Depends on structure but likely to be low to moderate	Very low; no allowances issued, no additional compliance costs.
	Complexity of ICAO role	Low—role is one of analysis and providing guidance and information	High—System design, administration and overseeing allowances & trading	High—System design, administration and baseline determination	Low—role in assisting with design and possibly providing administrative support and information	Low: emission guidance; review & fund adjustment every 3 y (this role might be performed by UNFCCC)

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Comparison and Evaluation of System Design (#2): Trading (2004) & Hybrid “Charge & Cap”					
Evaluation Criteria	Option 1. Aviation Emissions Trading System with ICAO Guidance	Option 2A. ICAO Cap System for Airlines	Option 2B. ICAO Binding Dual Target System for Airlines	Option 3. ICAO Assisted Voluntary Emissions Trading System	Option 2007: “Charge & Cap” emission, Fund climate change action
Competitiveness issues across airlines and between aviation and other transportation	Competitiveness issues between airlines in nations that do and do not participate	Competitiveness issues along routes between airlines in nations that do and do not participate	Competitiveness issues along routes between airlines in nations that do and do not participate	Provided it attracts greater participation, competitiveness concerns would be less than for other systems	None for international aviation (assumes that all airlines participate in this region agnostic solution).
	Fewer issues between international aviation and domestic aviation or other transportation modes	Broader coverage decreases the potential for competitiveness issues	Broader coverage decreases the potential for competitiveness issues		
Policy Context	Legal/policy constraints	Requires international agreement among ICAO members If system is to be fully open, requires a new instrument that is accepted outside the system	Requires international agreement among ICAO members If system is to be fully open, requires a new instrument that is accepted outside the system	Requires agreement of entities	Requires global aviation agreement only (scheme designed to make it acceptable to airlines, developed and developing countries).
	Interactions with other emissions trading systems	Must be consistent with rules being developed for international emissions trading under Kyoto Protocol or successor protocol and with individual systems	Must be consistent with rules being developed for other emissions trading systems so that system can be open	Must be consistent with rules being developed for other emissions trading systems so that system can be open	Allows the purchase of reductions from other sectors Aviation reductions would not be transferable outside of the aviation sector

Source:

The trading options and criteria used in this note are identical to the tables ES-1 and ES-2, found in the ICF Consulting report, pg 13-15, “Designing a Greenhouse Gas Emissions Trading System for International Aviation”, 2004 (ICAO reference: CAEP-SG20041-WP/3).