

Fuel and CO₂ Benefits from ASBU Block 0

Environment
ICAO Air Transport Bureau

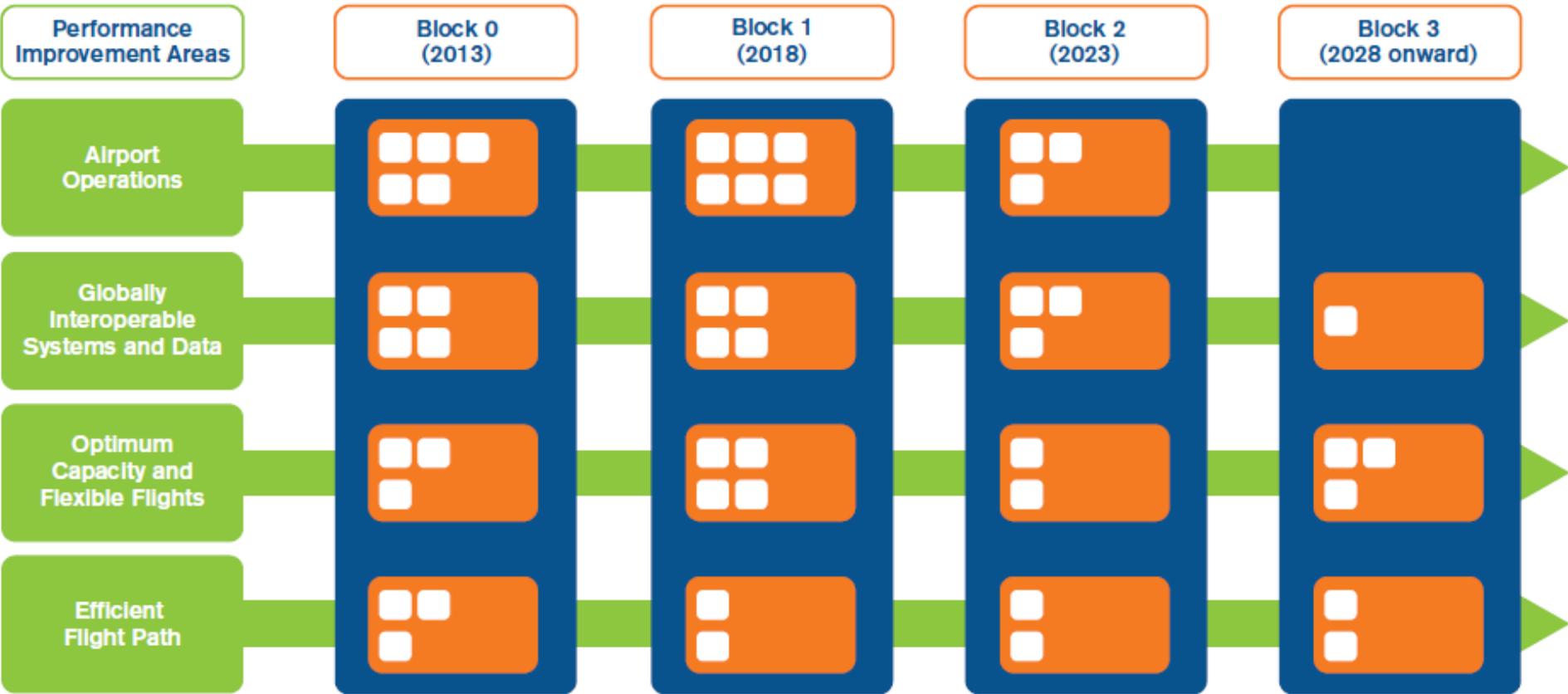


© ICAO 2015



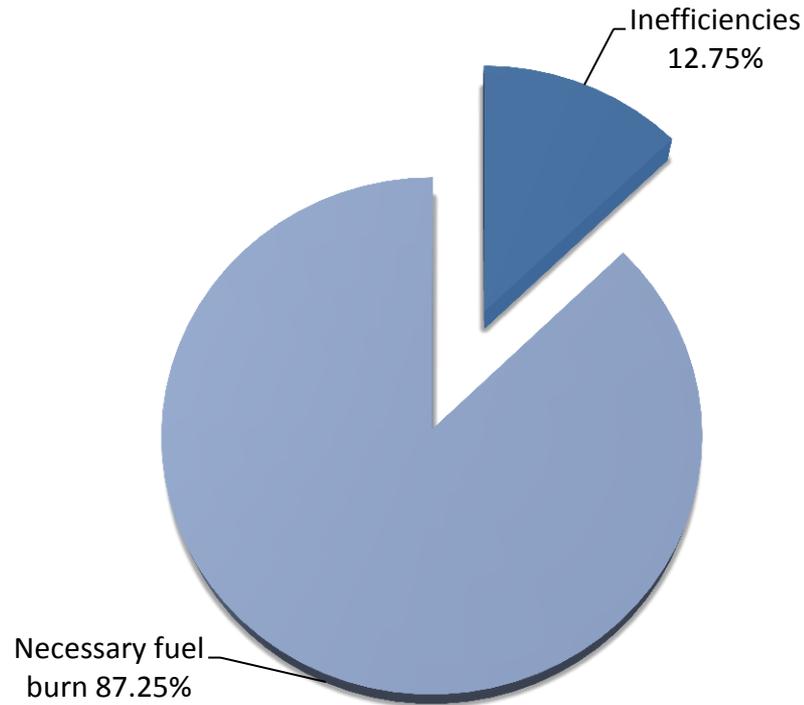


Aviation System Block Upgrades





In 2010, the global ATM system was between 87.25% and 89.75% efficient.



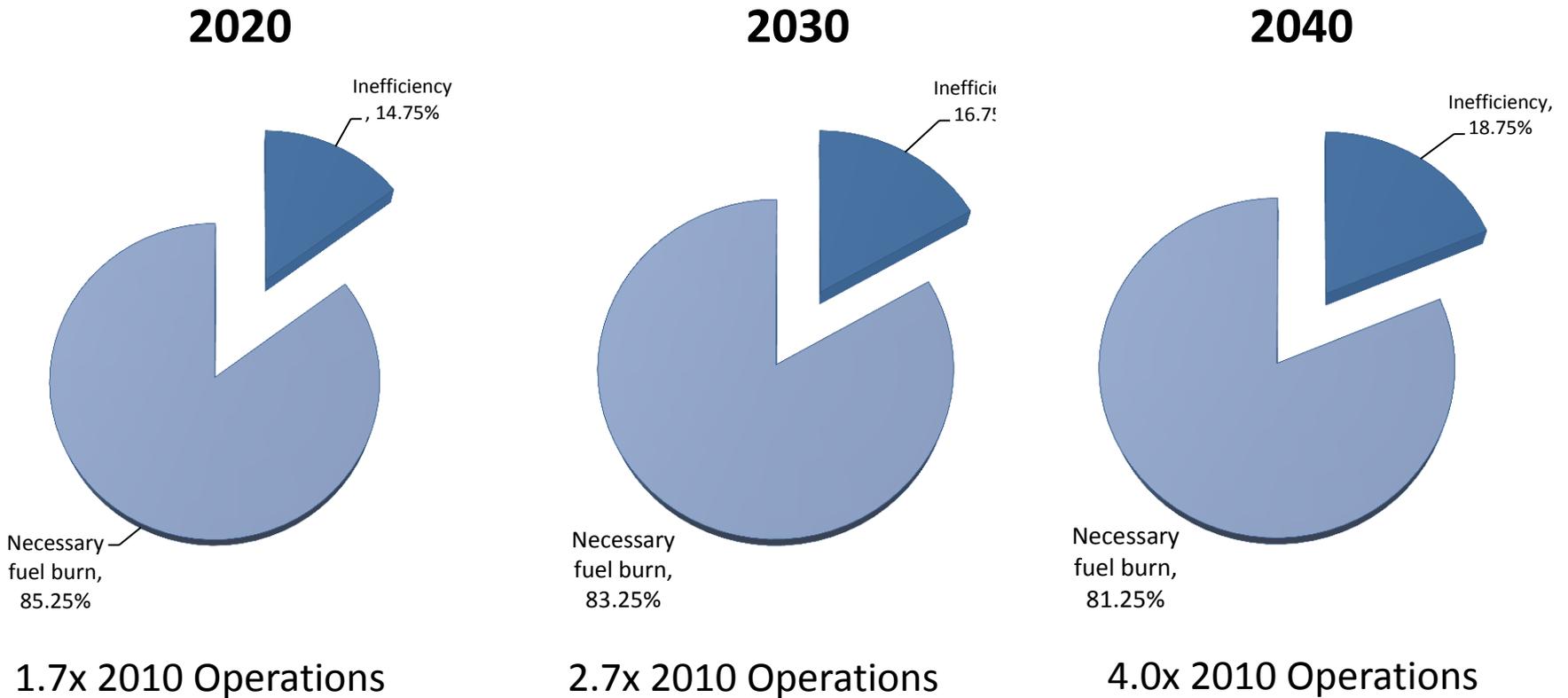
Source: IEOGG 2013





Operational Efficiency in a Static ATM System up to 2040

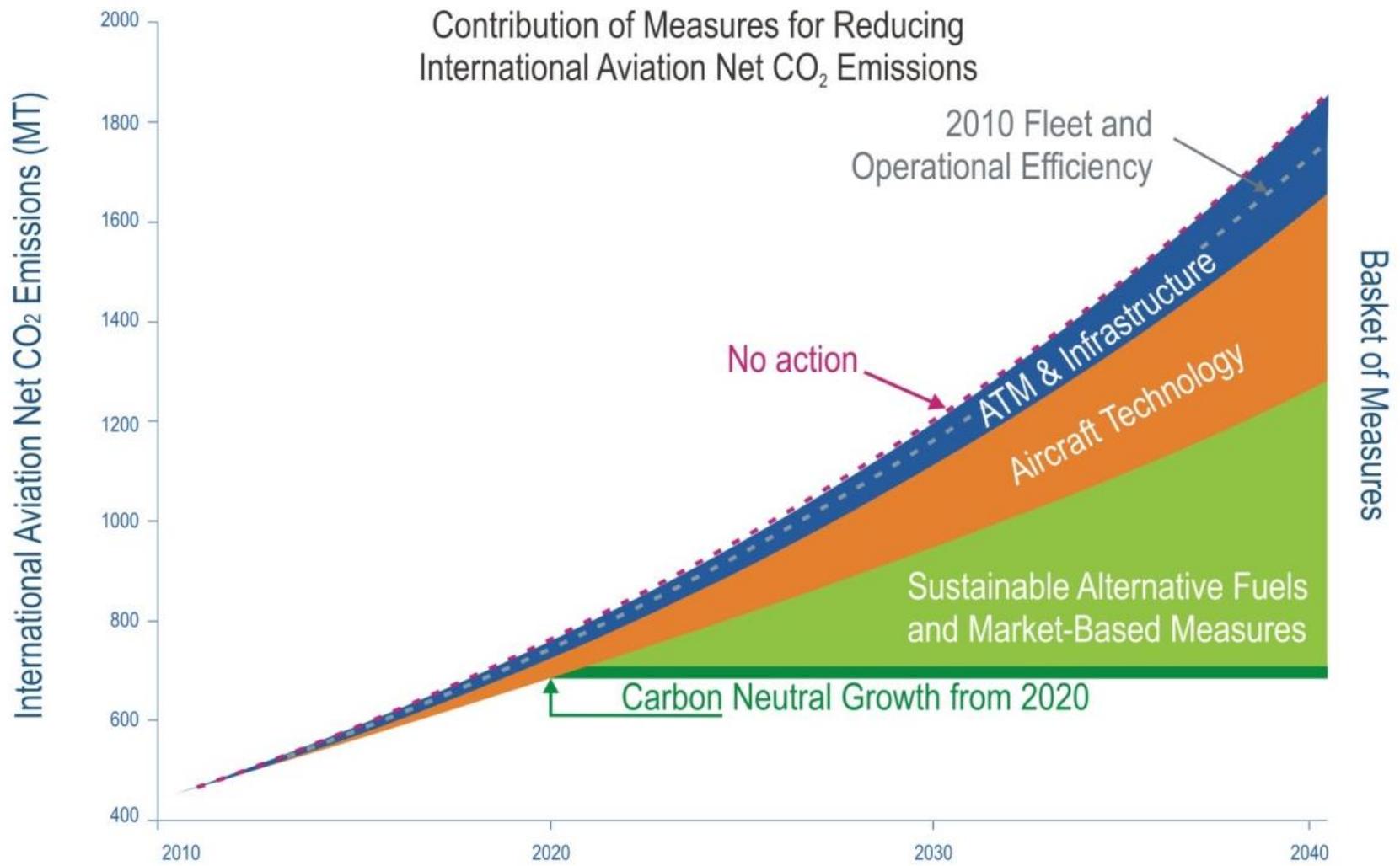
If no ATM improvements are made, system efficiency will degrade by 2% every decade.



Source: IEOGG 2013 and CAEP/9 Forecast



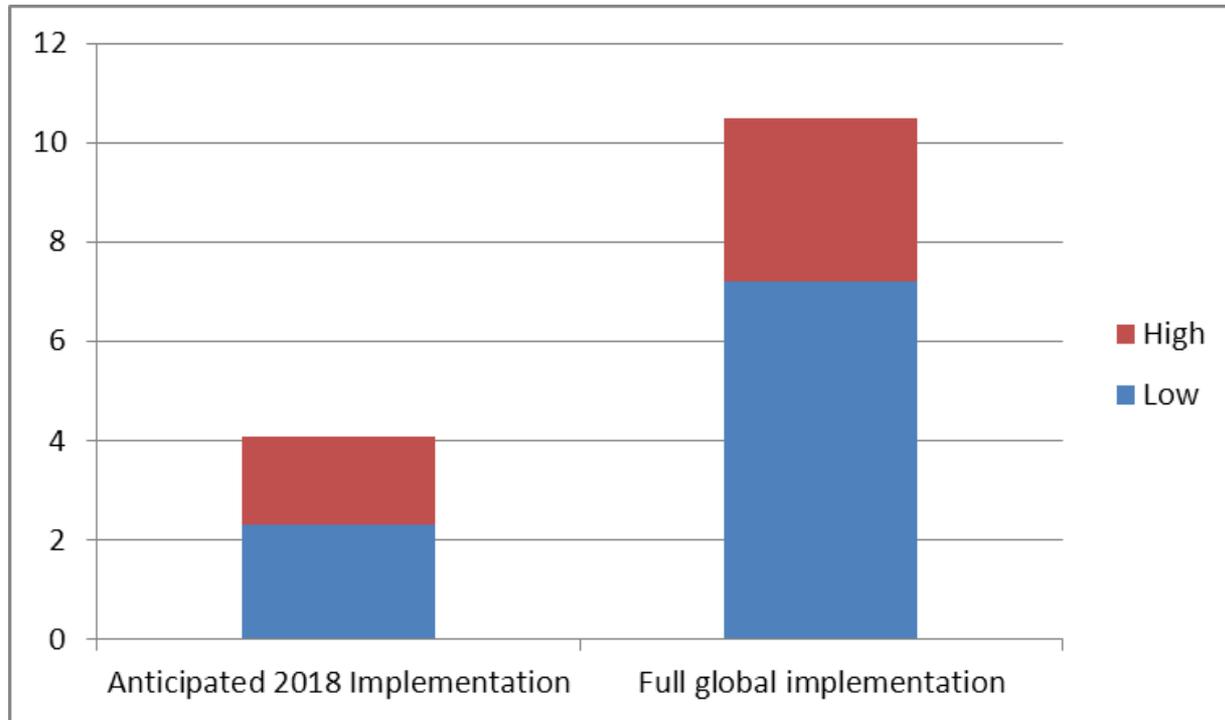
CAEP International Aviation Net CO₂ Emissions Trends





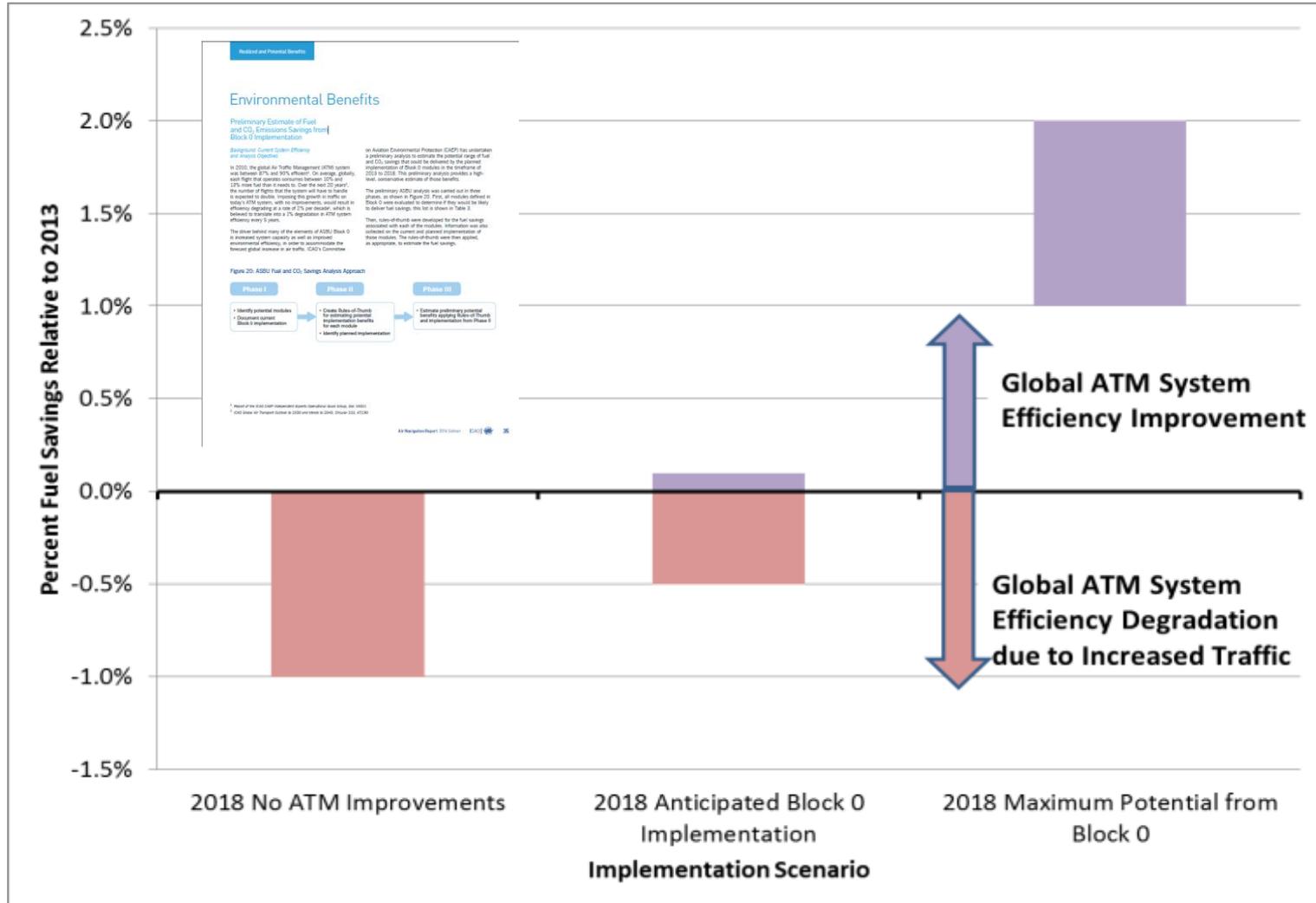
Module	Title	Benefits
B0-CDO	Continuous Descent Operations	Reduced fuel burn on arrival
B0-FRTO	Free Route Operations	Reduced in-flight fuel burn
B0-RSEQ	Runway Sequencing	Reduced airborne holding and taxi-out time
B0-CCO	Continuous Climb Operations	Reduced fuel burn during climb
B0-NOPS	Network Operations	Reduced fuel burn in all phases of flight, including taxi
B0-TBO	Trajectory Based Operations	Reduced in-flight fuel burn
B0-WAKE	Wake Turbulence Separation	Reduced taxi-out time and reduced in-flight fuel burn
B0-ACDM	Airport Collaborative Decision Making	Reduced taxi-out time
B0-ASUR	Alternative Surveillance	Reduced in-flight fuel burn
B0-OPFL	Optimum Flight Levels	Reduced in-flight fuel burn

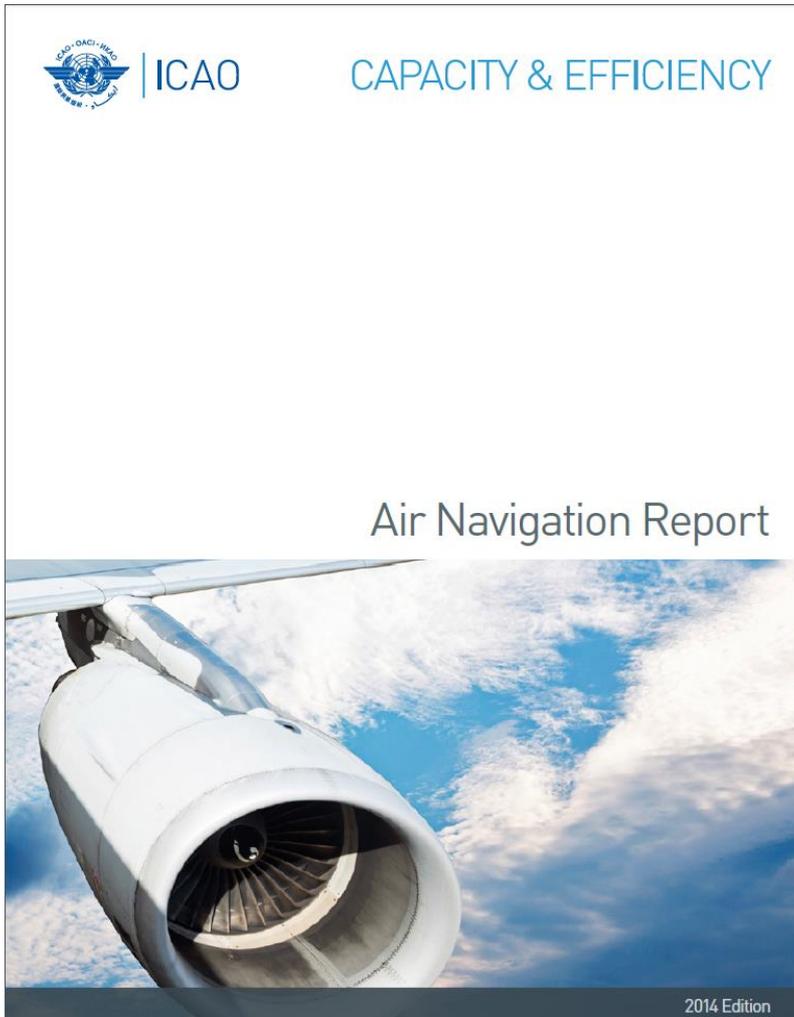




2018 Fuel Savings compared with 2013 Baseline (Mt)





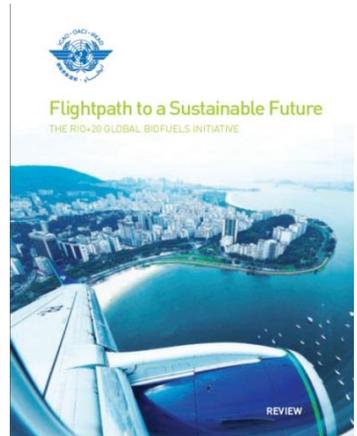
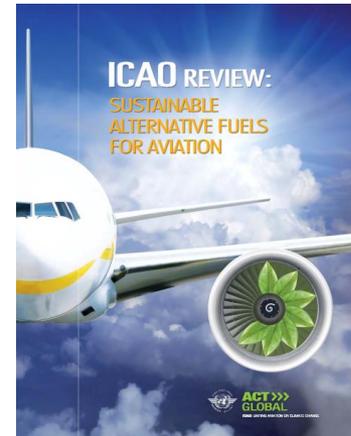
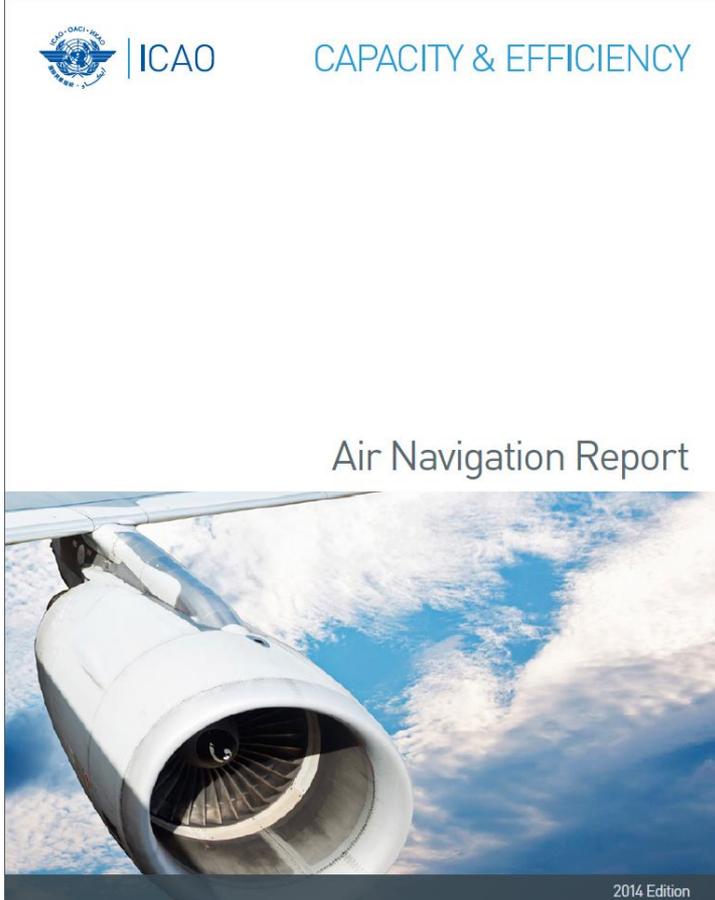
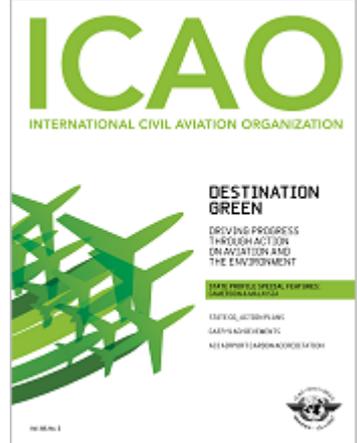
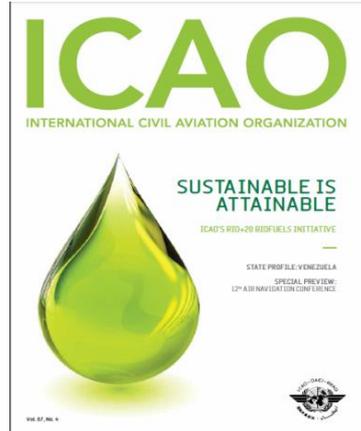
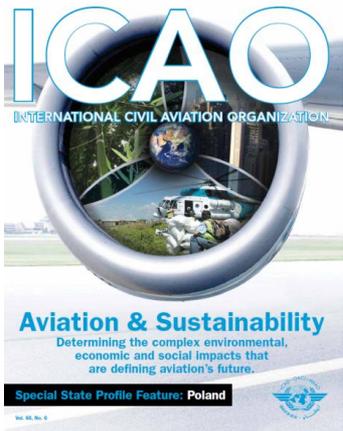


- Assuming a 1% degradation in ATM system efficiency in the absence of any action during the 2013-2018 timeframe...
- The implementation of ASBU Block 0 concept would **limit that degradation to 0.5%** with the possibility to provide a **net benefit in efficiency gains of 1.0 to 2.0%** based upon full global implementation of the Block 0 modules.



- Robust analysis of Block 0 – new modules added:
 - APTA (approach procedures including vertical guidance)
 - RSEQ (AMAN/DMAN)
 - SURF (A-SMGCS, ASDE-X)
 - FICE (increased efficiency through ground-ground integration)
 - DAIM (digital AIM)
 - AMET (Met information supporting enhanced operational efficiency)
- Preparing for Block 1 evaluation





For more information on our activities, please visit ICAO' website: <http://www.icao.int>

