



An introduction to Market-based Measures

Sam Brand
Environment Branch
ICAO Air Transport Bureau

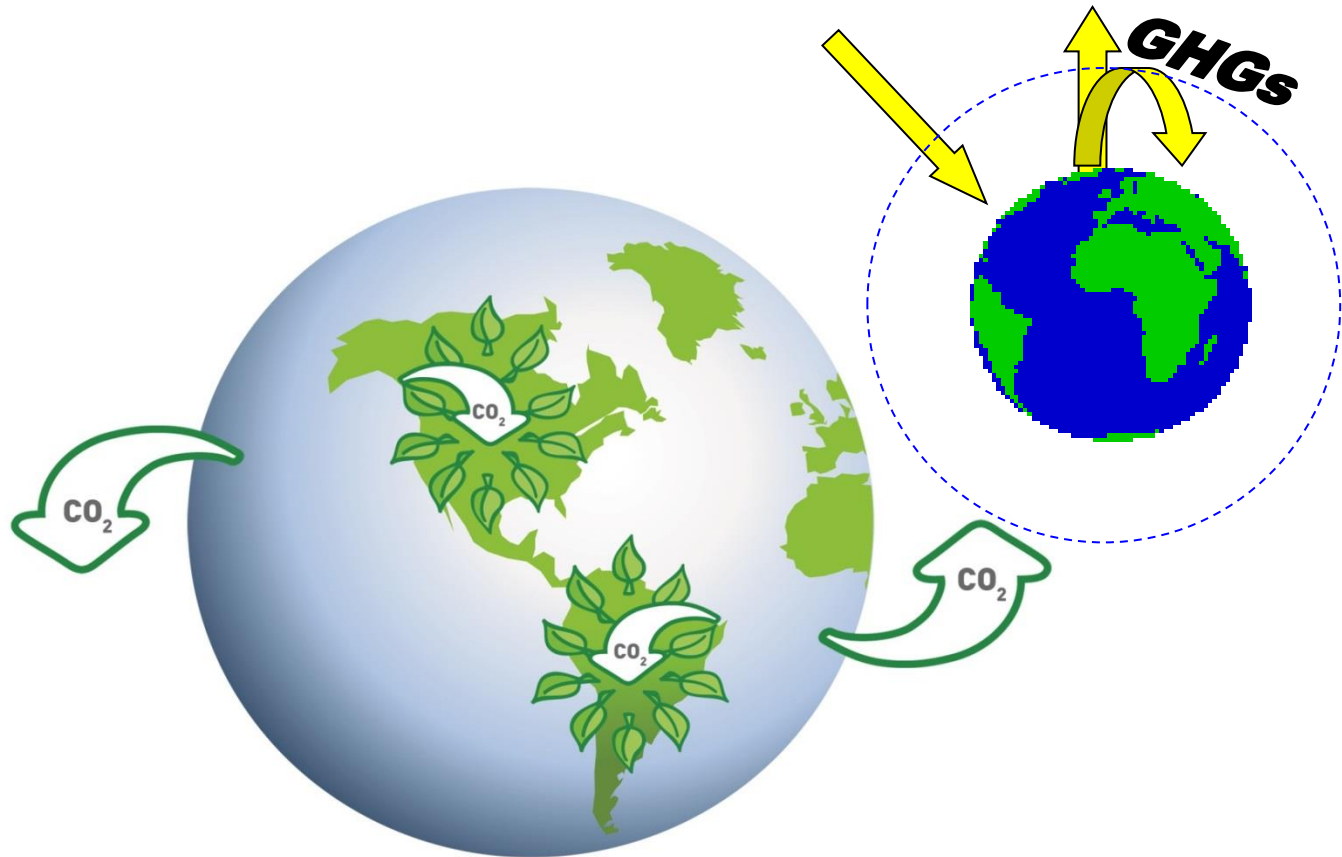


- ❑ Climate Change Emissions
- ❑ Why Market-based Measures?
- ❑ What is a Market-based Measure?
- ❑ Taxes and Charges
- ❑ Offsetting and Emissions Trading
- ❑ Work of ICAO

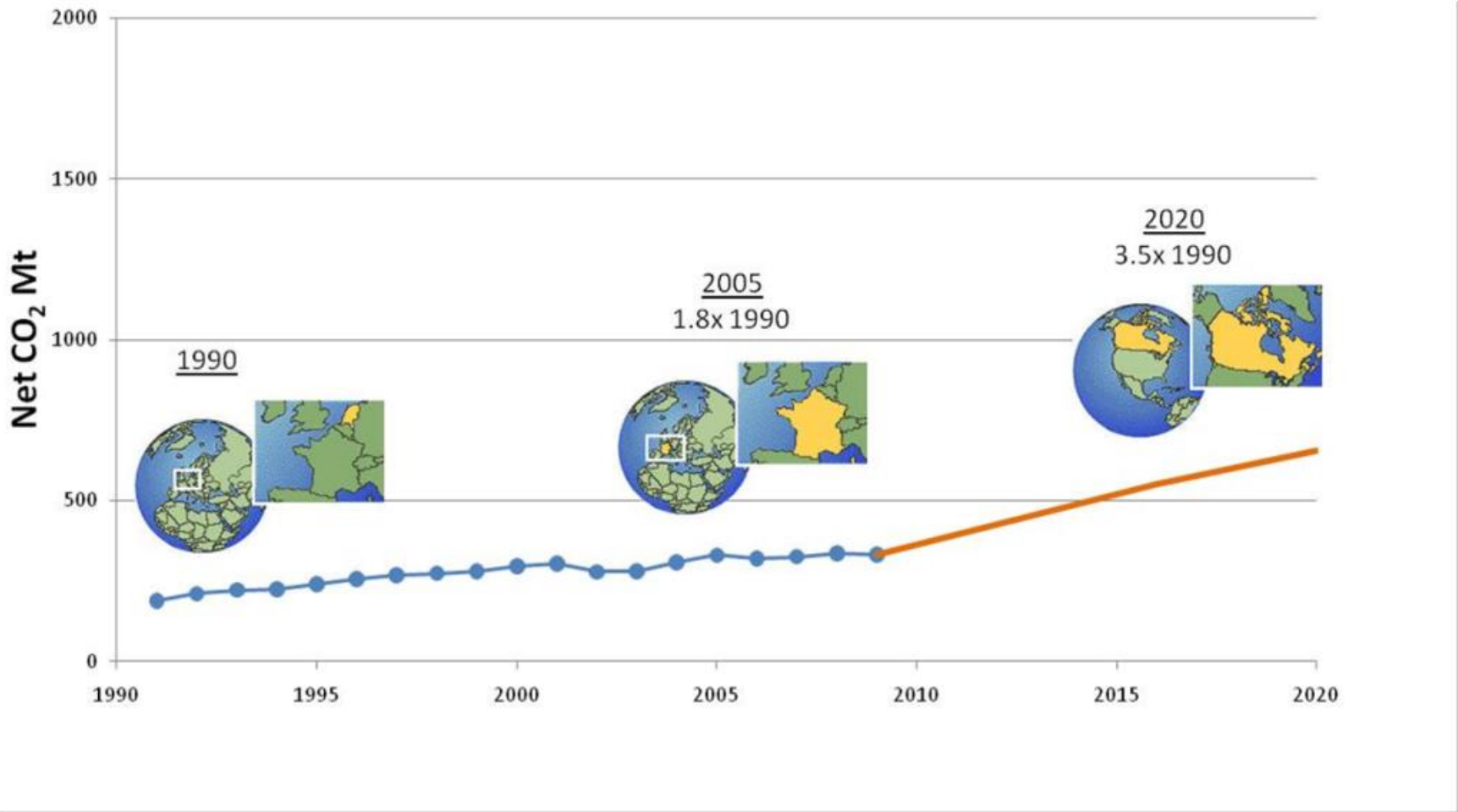




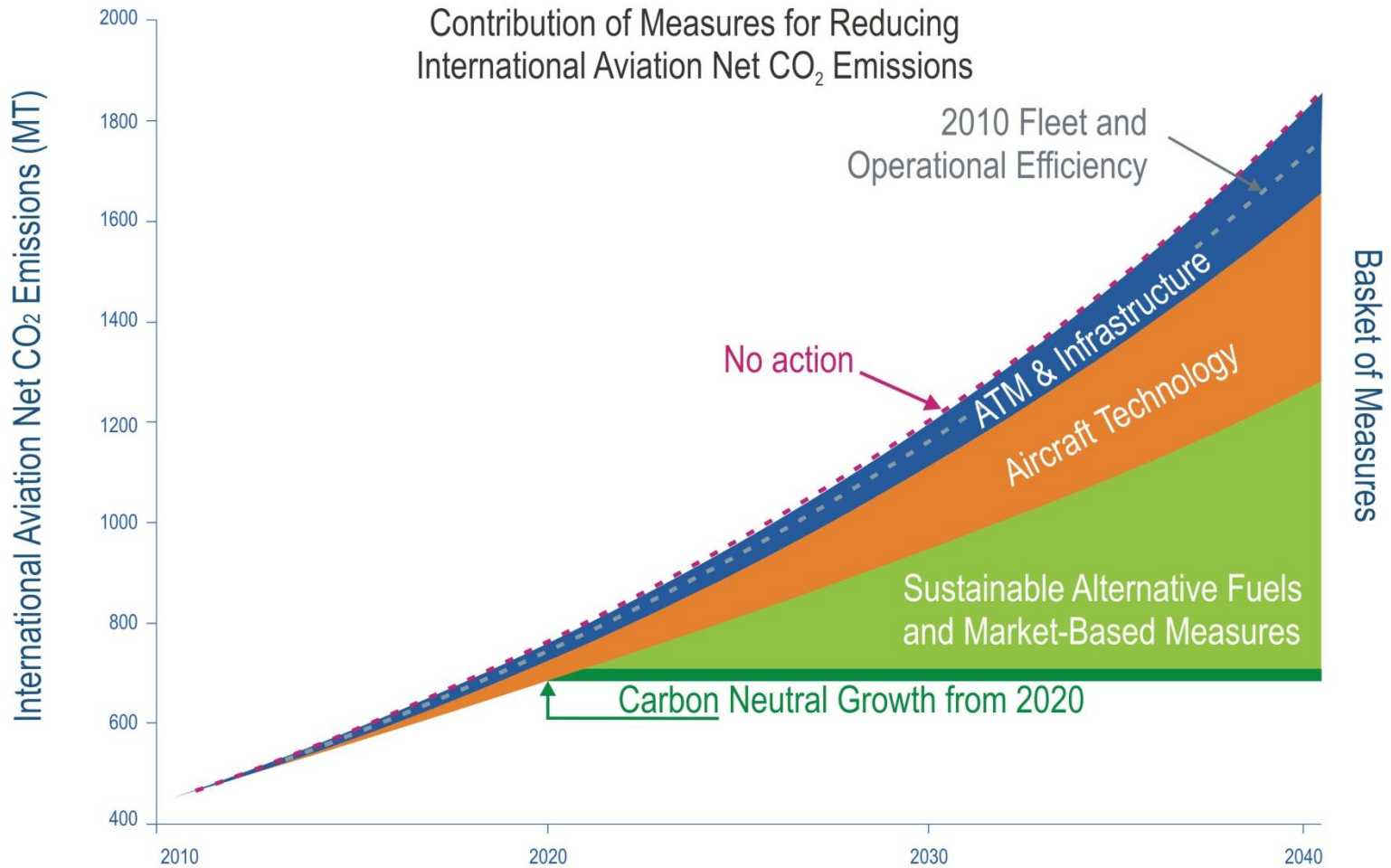
CLIMATE CHANGE EMISSIONS



WHY MBMs?



Emissions Forecasts



- 16 Guiding Principles for the design and implementation of MBMs that address sustainability, environmental integrity, cost-effectiveness, transparency, simplicity, non-duplication, and balancing of ICAO and UNFCCC principles.



Taxes & Charges

Offsetting

Emission Trading



- ❑ ICAO has unique definitions that are set out in its policies and guidelines.
- ❑ A tax is a levy that is designed to raise national or local government revenues that are generally not applied to civil aviation in their entirety or on a cost-specific basis.
- ❑ Chicago Convention, Article 24 (customs, fuel)



- ❑ A charge is a levy that is designed and applied specifically to recover the costs of providing facilities and services for civil aviation.
- ❑ Chicago Convention Articles 15 (airport and navigation services)



OFFSETTING

- ❑ Emissions in one sector or location are offset by reducing emissions in a different sector or location
- ❑ Standard measurement is one tonne of CO₂ equivalent, which equates to one emission unit or credit
- ❑ These emission units can be bought, sold or traded
- ❑ There are quality assurance measures to assure actual reductions



Offsetting – How it works (1)



- ❑ Major rehabilitation creates emissions reduction opportunities
- ❑ Offsetting acts as incentive to reduce emissions
- ❑ Ability to create offsets creates a carbon market



\$30 Million to upgrade to Coal

\$50 Million to upgrade to Natural Gas (NG)

\$20 Million additional investment

Coal emissions = 10 Mt/year

NG emissions = 5 Mt/year

5 Mt/ year = credits

\$50 Mil. ÷ 5 Mt = \$10/credit





Carbon Credit Cost = \$10/tonne

Carbon Credit Sale = \$5/tonne

\$5 x 5 Million credits = \$25 Million

Cost to add NG = \$20 Million

Potential Profit = \$5 Million



- ❑ Supply and Demand for Credits
- ❑ Differences in Costs to Reduce Emissions
- ❑ Encouraging New Technologies



How it works:

- ❑ A cap is placed on absolute emissions
- ❑ Allowances are created for each tonne of carbon below the cap
- ❑ Participants are allocated a portion of the allowances based on their share of total emissions
- ❑ Allowances can be bought sold and traded



- ❑ Participants included under the scheme monitor and report their emissions
- ❑ The number of allowances equal to the emissions generated are surrendered
- ❑ Those capable of making emission reductions relatively inexpensively can do so; and
- ❑ Surplus of allowances can be sold or banked for future years



- ❑ The ETS creates an incentive to reduce emissions
- ❑ Participants who face higher costs to reduce emissions also have an advantage
- ❑ An ability to leverage investment is created



- ❑ Linked to targeted reduction level
- ❑ Low cost reductions for the aviation sector
- ❑ Flexibility for market conditions (unlike tax)
- ❑ Administration of the scheme



- ❑ Exploring feasibility – quantitative analysis
- ❑ Design Features
- ❑ Development of a global MBM scheme





- ❑ A38-18 – Resolution on Climate Change
- ❑ ICAO Council Decisions on pathway
- ❑ Environment Advisory Group (EAG)
- ❑ Global Aviation Dialogues (GLADs)



- ❑ International aviation greenhouse gas emissions are expected to continue rising
- ❑ MBMs are intended to support the lowest possible cost to reduce emissions in aviation, and all sectors
- ❑ MBMs benefit sectors facing higher reduction costs
- ❑ There many factors that need to be assessed when considering MBMs for international aviation

