An introduction to market-based measures (MBMs)

Environment, Air Transport Bureau
International Civil Aviation Organization (ICAO)





OUTLINE

1. The climate change challenge
2. What are market-based measures (MBMs)?
   a. The three main types of MBMs
   b. Examples of MBMs
3. ICAO and future work
   a. Global MBM
   b. Voluntary use of MBMs in the context of national action plans

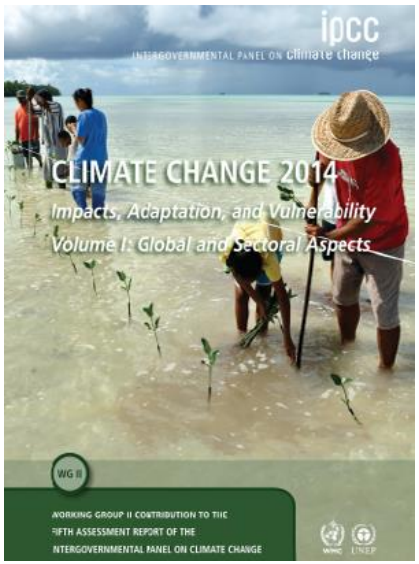


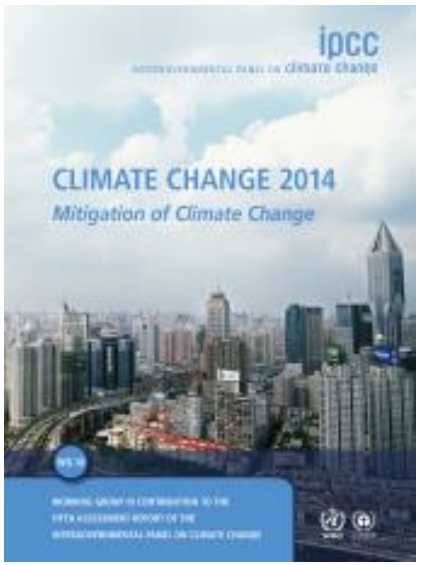


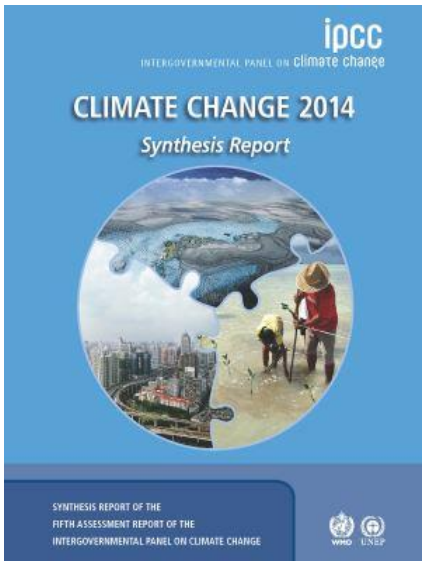
Climate science: the findings

Intergovernmental Panel on Climate Change (IPCC)
Fifth Assessment Report (AR5), 2013-2014

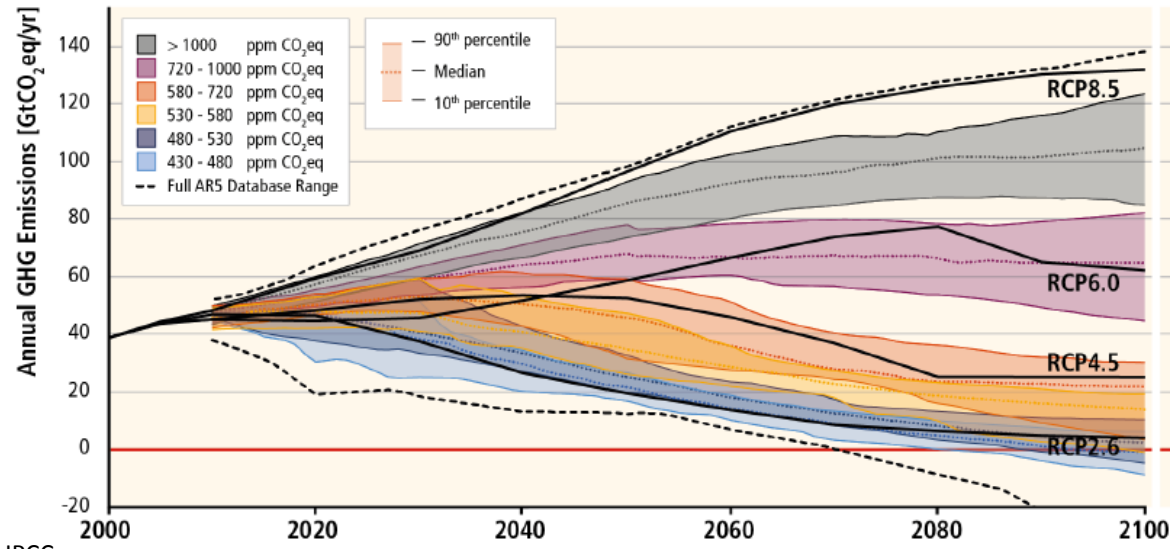
- "Warming of the climate system is unequivocal"
- "Human influence on the climate system is clear"
- "It is *extremely likely* that human influence has been the dominant cause of the observed warming since the mid-20th century"



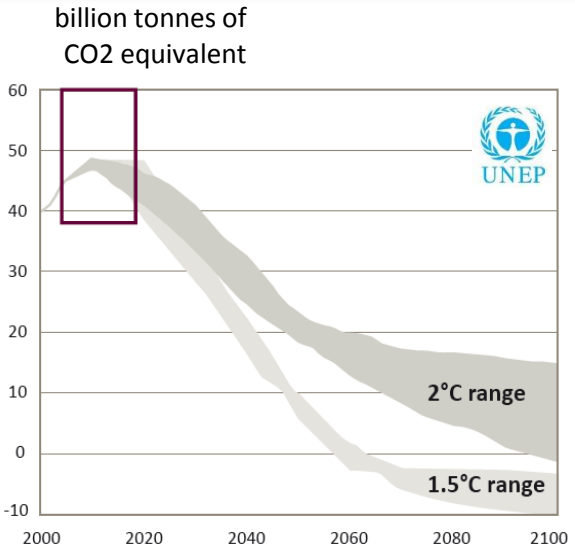




Global emissions pathways



IPCC

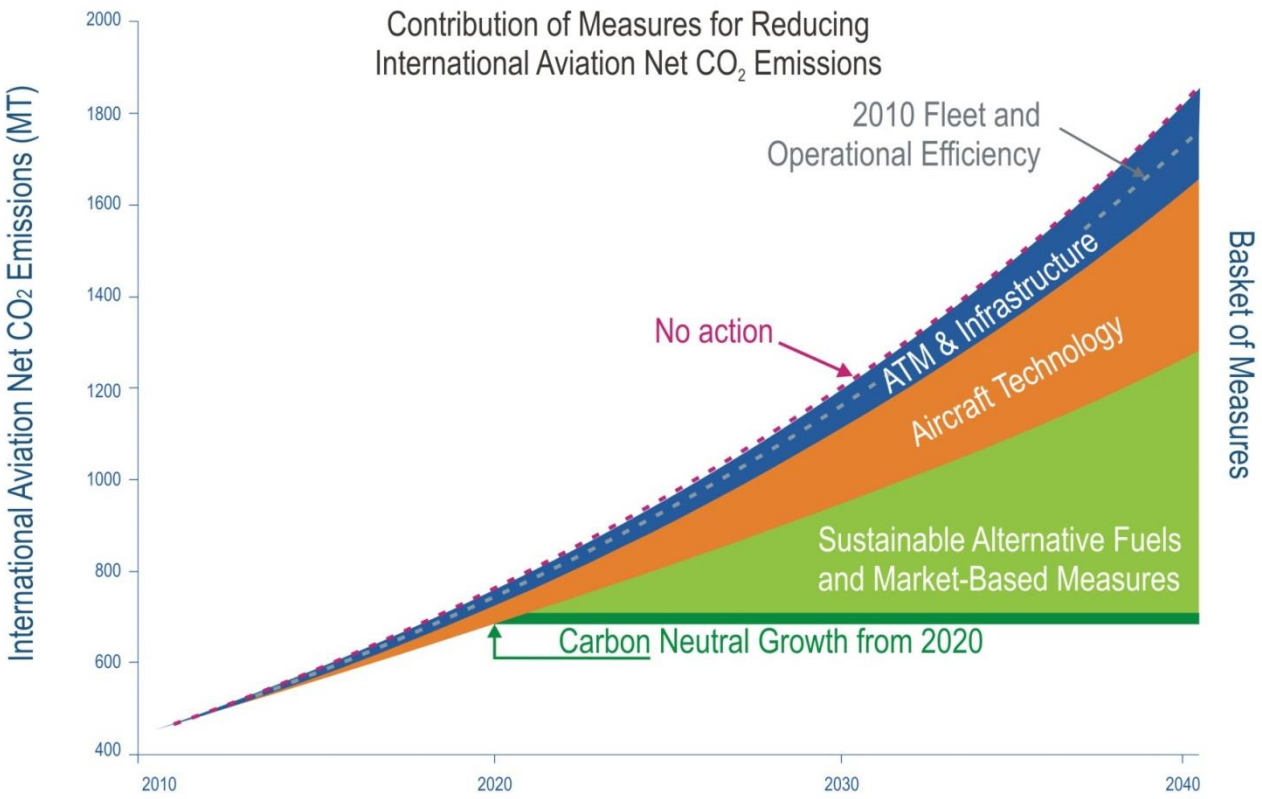


Global emissions are approximately 49 billion tCO2e / year

To limit the global temperature increase above pre-industrial levels to a maximum of 2ºC, global emissions need to peak by 2020 and scale down significantly by the end of the century

Aviation currently represents approximately 2% of global emissions – but traffic is growing rapidly

International aviation emissions



Aspirational goal: carbon neutral growth from 2020

To be achieved through various measures, including market-based measures

Market-based measures

- Market-based measures (MBMs) can help meet climate goals through a more flexible approach than traditional regulatory measures ("command-and-control")
- MBMs provide flexibility to emitters by giving them alternative methods of reducing emissions
- In aviation context, three main types of MBMs:
  - Levies
  - Emissions trading
  - Offsetting





MBM type #1: levies

- A “levy” is a measure for collecting revenue arising from a specific activity
- A levy can fall into one of two categories

1. A “tax” raises revenue from an activity, and this revenue is then pooled into general revenue

2. A “charge” raises revenue from an activity for the purpose of paying the costs of providing facilities and services relating to the activity itself
    - Examples: airport services, navigation services



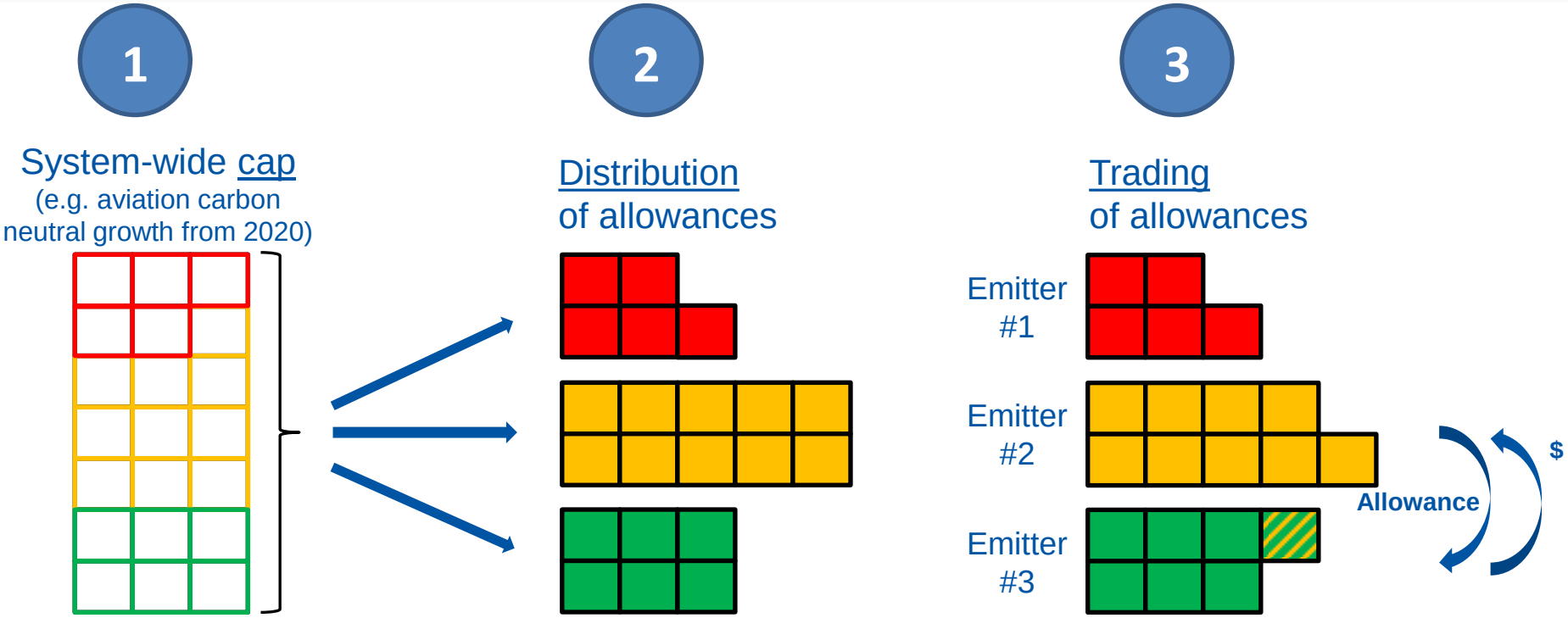


MBM type #2: emissions trading

- A cap (i.e. maximum limit) is placed on aggregate emissions within a country, a sub-national jurisdiction, a sector, etc.
- Units (1 unit = 1 tCO2e) are created equal to the size of the cap, and these units are then distributed to emitters
- Each emitter needs to obtain and redeem units to cover its emissions, typically on an annual basis
- Emitters can trade units among themselves → for example, an emitter which reduces its emissions can sell its surplus units for profit
- As long as the cap is consistent, the system's environmental objective is attained




Emissions trading in action



- A cap is a limit on the total amount of emissions that entities (emitters) operating under a cap may emit during a defined period of time; each square represents one emissions unit
- In step 1, the system-wide cap is calculated and allowances are issued equal to the cap
- In step 2 the allowances are distributed among the emitters under the ETS
- In step 3 allowances can be bought, sold or traded among emitters

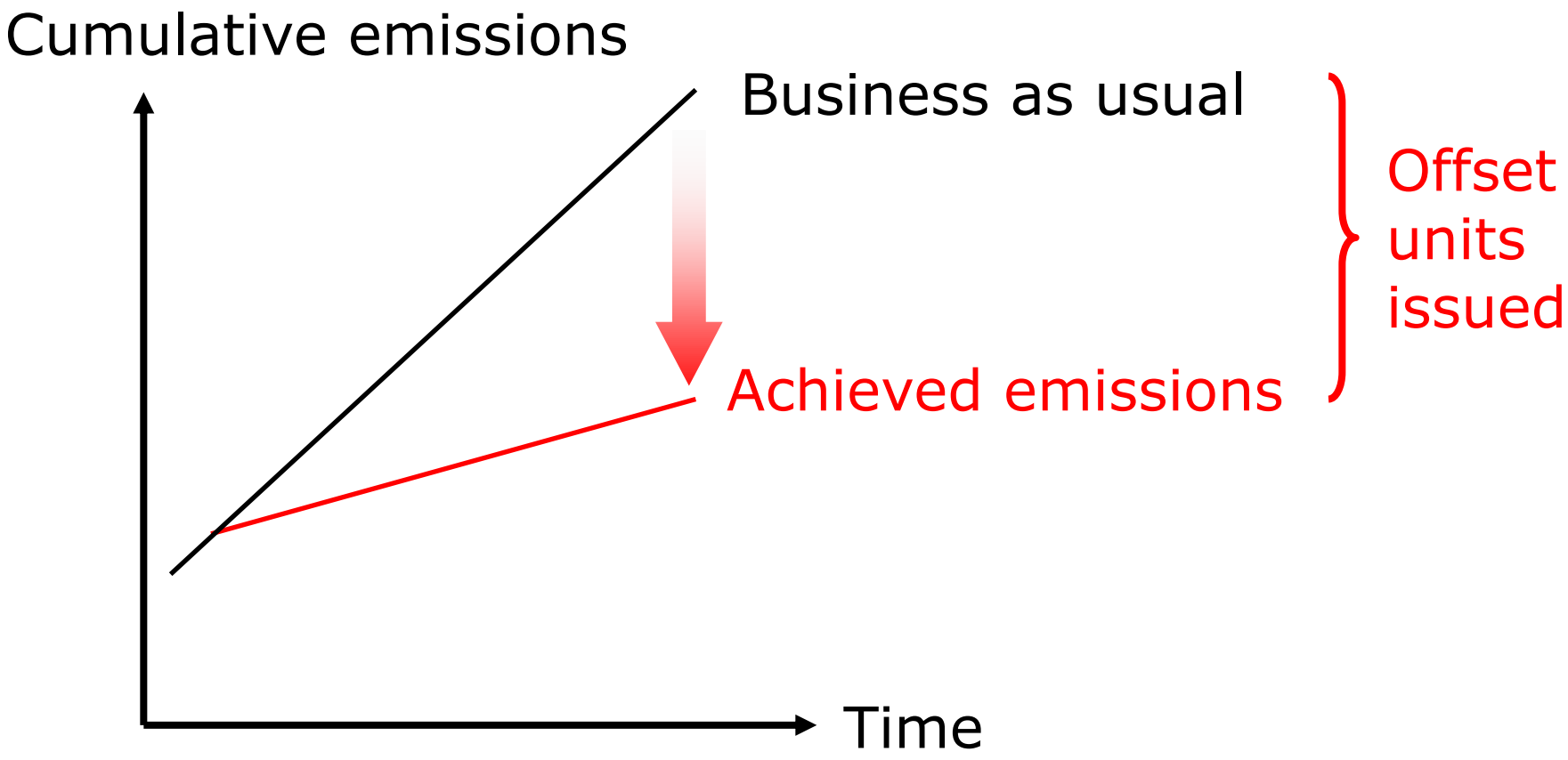
MBM type #3: offsetting

- Offsetting is the concept of reducing emissions in another sector or location, rather than reducing an emitter's own emissions
- From a climate perspective, the origin of the emission reductions is irrelevant → what matters is that emissions are reduced somewhere
- Offsetting may be more cost-effective than reducing an emitter's own emissions → particularly in aviation
- Quality standards are essential to ensure that emissions are actually being reduced in the other sector or location and are not "double-counted" against multiple targets
- Typically also requires the use of units (1 unit = 1tCO2e)

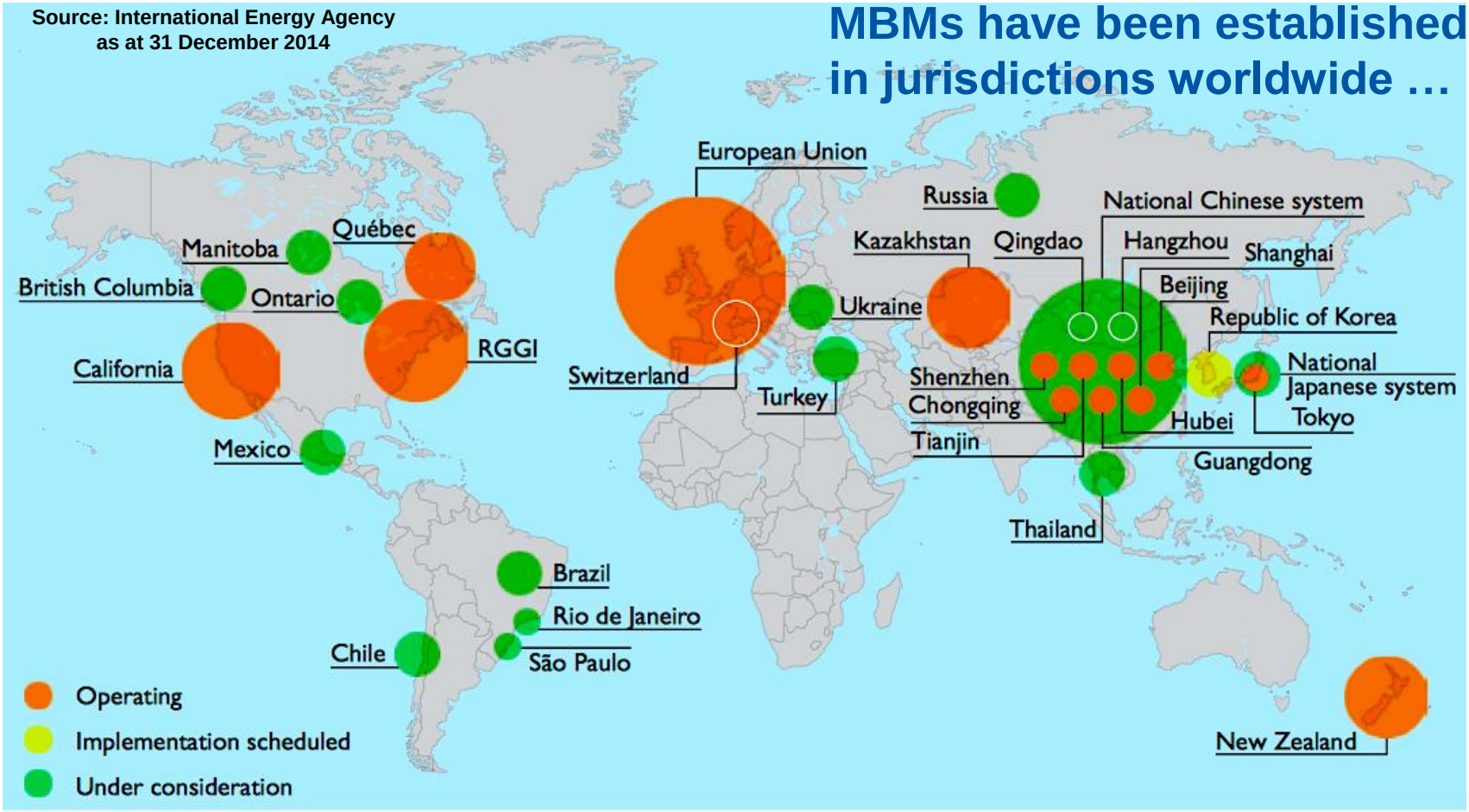




The basis for issuing offset units



The global use of MBMs (1)



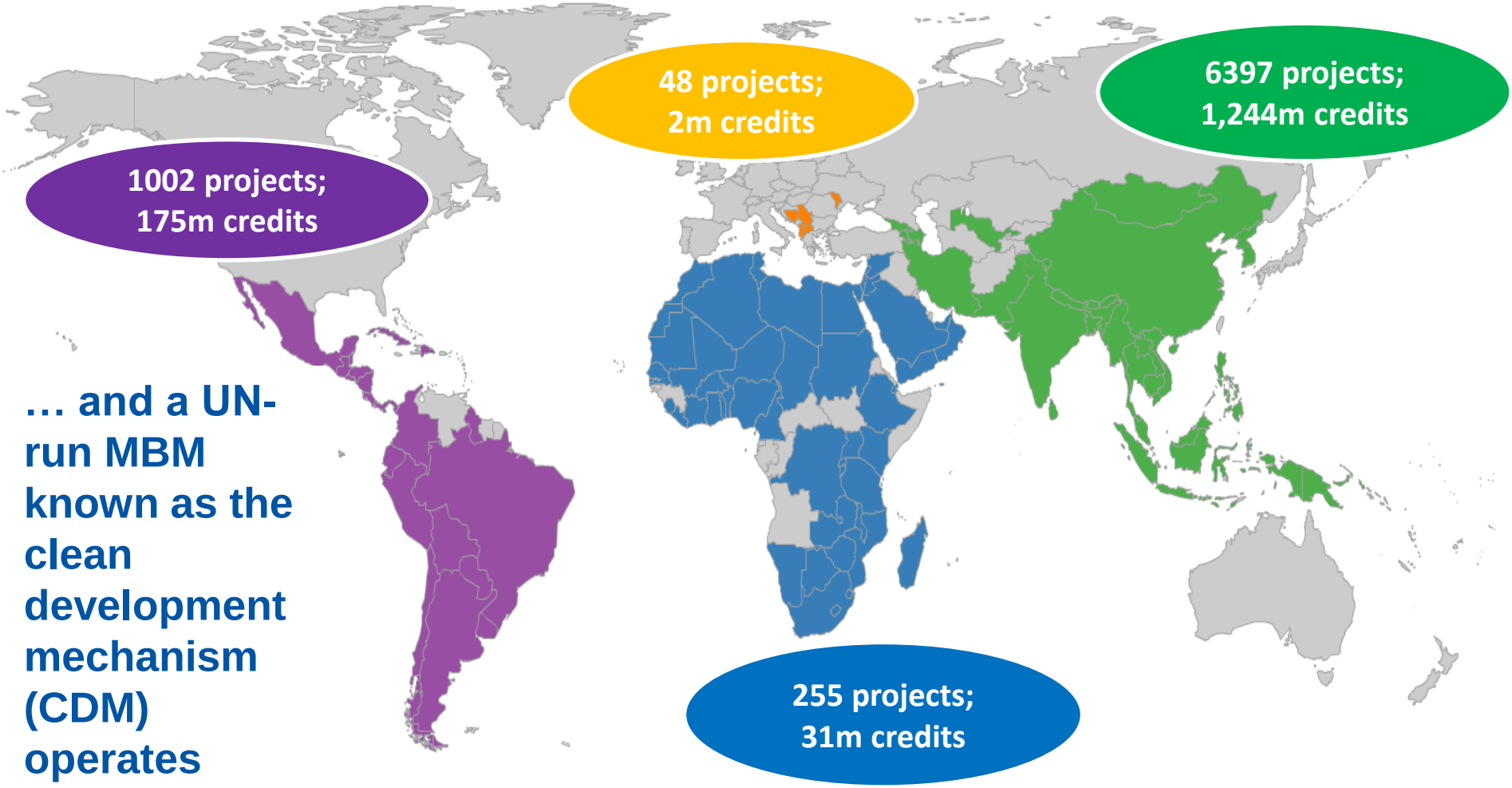
This map is without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries, and to the name of any territory, city or area.

Note: The size of each circle is approximately proportional to GHG emissions covered.

Source: Adapted from country sources and ICAP (International Carbon Action Partnership) (2014), "ETS Map", https://icapcarbonaction.com/ets-map.



The global use of MBMs (2)



… and a UN-run MBM known as the clean development mechanism (CDM) operates worldwide

Developments at A38 (2013)

- Decided to develop a global MBM for international aviation (from 2020 onwards)
- Requested the Council, with the support of Member States, to:
  1. Finalize all preparatory work (technical, environmental and economic impacts, modalities of possible options)
  2. Organize seminars and workshops
  3. Identify major issues and problems, and make a recommendation for a global MBM that addresses them
  4. Report the results of the above work for decision at A39 (2016)





Post-A38 actions

1. Council has created a body made up of ICAO representatives
   - Environment Advisory Group (“EAG”)
   - Responsible for overseeing the development of the global MBM
2. CAEP has also created a technical expert group
   - Global MBM Task Force (“GMTF”) responsible for:
     - Developing emission unit eligibility
     - monitoring, reporting, and verification requirements
     - Assessment of MBM impacts on emissions and cost
3. Global Aviation Dialogues (GLADs) on market-based measures to address climate change (five regions, April 2015)



Pre-2020 actions

- For the pre-2020 period, A38:
  - Recognized the use of voluntary offsetting
  - Invited States to encourage airlines to offset emissions, particularly with units from international MBMs such as the CDM
- In their Action Plans, member States could outline the role of offset units, particularly from MBMs like the CDM
- Over 130 developing countries have a "designated national authority" for the CDM (usually in environmental ministries)





SUMMARY

- Action by all sectors is required to address the climate change challenge
- The aviation sector is faced with high costs for making in-sector reductions
- If the sector wishes to continue growing, it needs to explore all means of addressing emissions
- MBMs may present a cost-effective option for addressing emissions at a global level and at the lowest possible cost