European Parliament

Briefing

ENVIRONMENT, PUBLIC HEALTH AND FOOD SAFETY (ENVI)

Issues at stake at the 10th session of the ICAO Committee on Aviation Environmental Protection (CAEP/10)

KEY FINDINGS

- Despite efficiency improvements, **CO_2 emissions** from international aviation are projected to be **seven times higher** in 2050 than in 1990. At the Paris climate conference (COP21), countries agreed to limit climate change to well below 2°C. Without **considerable contributions of the aviation sector** to global mitigation efforts, this goal cannot be achieved.
- In 2013, the International Civil Aviation Organization (ICAO) established a working group for developing a **Global Market-Based Measure (GMBM)**, which should be adopted in 2016 and come into force in 2020. In addition, ICAO is pursuing a so-called basket of measures to reduce aviation CO_2 emissions, which includes the development of a **CO_2 efficiency standard for new aircraft**, the development of guidance documents on **operational measures** and initiatives to promote the development and testing of **alternative sustainable drop-in fuels** from non-fossil sources.
- The main issues at stake at CAEP/10 are the adoption of a **CO_2 efficiency standard for new aircraft**, a report from the working groups on the development of a **Global Market-Based Measure** and the commissioning of an impact assessment of a **standard for non-volatile compounds**. Moreover, an information paper which pursues the question of whether the aviation sector will achieve its aspirational goal of increasing **energy efficiency by 2 % per year** may receive some attention during the session.
- It is recommended that the ENVI delegation uses opportunities in **bilateral meetings** with representatives of other states and other opportunities to promote the adoption of an **ambitious CO_2 standard** for new aircraft and underscores the importance of adopting a **comprehensive, reliable and environmentally sound GMBM**.

1. Greenhouse gas from international aviation – background

In the period of 1990 to 2010, CO_2 emissions from international aviation increased by 79 %, or 3.0 % per year (IEA 2014). In comparison, the total global GHG emissions only rose by 1.1 % per year during the same period (van Vuuren, D. P. et al. 2011). Consequently, international aviation increased its share of global CO_2 emissions from 0.9 % in 1990 to 1.3 % in 2010. In addition to carbon dioxide, emissions from aviation also impact cloud formation, ozone generation and methane reduction, amongst other effects. These non-CO_2 effects increase the impact of aviation on climate change by a factor of at least 2.[1]

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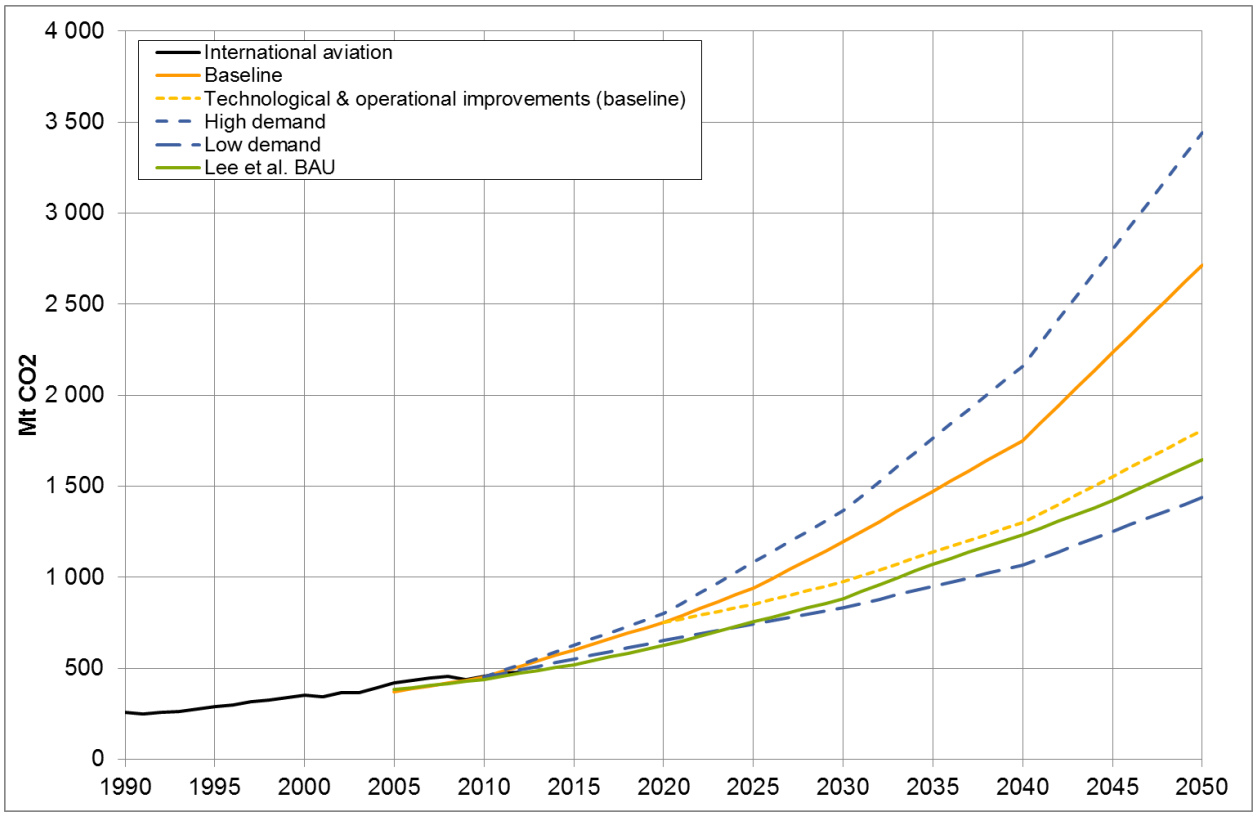
In 2013 the Committee on Aviation Environmental Protection of the ICAO finished its assessment of "present and future impact and trends of aircraft noise and aircraft engine emissions" (ICAO 2013c). It includes projected fuel burn and therefore CO_2 emissions from international aviation for the period of 2005 to 2050 in a baseline scenario as well as a high and a low demand scenario. The impact of technological and operational improvements is provided for the baseline scenario (Figure 1). According to this assessment, the improvements have a potential to reduce CO_2 emissions by 33 % in 2050 compared to the baseline. Despite this, emissions are still projected to be seven times higher in 2050 than in 1990; without the improvements, projections are ten times above 1990 levels in 2050. Other projections of CO_2 emissions from international aviation show a similar trend but are on the lower bound of the ICAO range.

Figure 1: Historic and projected CO_2 emissions from international aviation



Source: IEA 2014, ICAO 2013c, Lee et al. 2013.

The data used by ICAO for technological and operational improvements are based on the optimistic scenario (ICAO 2013b, p. 23) but this might not be realistic: Kharina & Rutherford (2015) analysed historic trends in energy efficiency improvements for new aircraft and found that the industry is lagging behind ICAO's efficiency goals. Instead of achieving a reduction of 27-31 % compared to a set of reference aircraft by 2020, the target will only be met in 2032. The same time lag of 12 years also applies in the case of the 2030 efficiency goal. The authors conclude that "it appears unlikely that ICAO can achieve its higher-level technology goals without additional policy support."

There is a general consensus in the literature that technical and operational measures will not be able to offset emission growth in the coming decades. Bows-Larkin (2015) notes that only more radical long-term technical options such as blended wing bodies or hydrogen fuels will be able to reduce emissions beyond a 1-2 % annual energy efficiency improvement. Such options require the setting up of new infrastructure and are not easily implemented. In addition, new aircraft models only penetrate slowly into the market with emissions being driven by older models. Retrofitting of aircraft and infrastructure can help to reduce emissions of the existing fleet. Bows-Larkin is also sceptical about the possible impact of operational measures: reduced congestion and improved throughput of airspace

and airports would likely lead to increased aviation growth and thus rather to higher energy consumption and CO_2 emissions.

During the Climate Change Conference in Paris in 2015, countries agreed to limit climate change to well below 2°C compared to pre-industrial levels. If the world at large followed an emissions trajectory compatible with such a target[2] but emissions from international aviation increased as forecast in the ICAO baseline scenario, the sector would use up 22 % of the global carbon emissions budget in 2050 (Cames et al. 2015).

2. EU legislation on reducing aviation emission – overview

The EU's main legislation for addressing GHG emissions from aviation is the inclusion of aviation into the Emissions Trading System of the European Union (EU ETS). The EU ETS was established by Directive 2003/87/EC and amended in 2008 Directive 2008/101/EC in order to include aviation. The directive includes the following key provisions, among others:

- inclusion of aviation in the ETS from January 1st, 2012
- geographical scope: all internal, incoming and outgoing flights
- cap & allocation of aviation allowances
- auctioning of aviation allowances
- special reserve for particular aviation operators
- use of aviation allowances (aEUA) and all other units eligible under the EU ETS
- monitoring, reporting and verification (MRV)
- aircraft operators in EU Registry.

The directive also includes a provision which enables the mutual alignment of requirements for routes to countries which establish an ETS with similar requirements or any other comparable policy for the sector.

In 2012, when airlines for the first time were confronted with the implementation of the inclusion of aviation in the ETS, several countries, including USA and China, complained about the EU's initiative and considered it as a unilateral policy (Box 1). Some countries urged their airlines not to comply with the EU requirements. In order to prevent the development of many different and likely incompatible trading schemes or other policies to reduce aviation's greenhouse gas emissions, ICAO's Secretary General established a working group for the development of a Global Market-Based Measure (GMBM or MBM).

To alleviate the conflict with other states and to provide ICAO with room for manoeuvre in the development of a GMBM, the EU took the so called "Stop-the-Clock decision" in 2013. It temporarily reduced the geographical scope of the directive: international flights to and from EU territory were exempted from the scheme. Currently only intra-EU flights are covered by the ETS, though independently of the flag or nationality of all carriers.

The reduced geographical coverage reduces the environmental efficacy of including aviation in the ETS since intra-EU flights account only for about 25 % of the original scope (European Commission 2013). As a result, this exemption is limited until the end of 2016 (European Union 2014). By the end of 2016 the EU has to determine whether the decisions taken by the ICAO Assembly in September/October 2016 are consistent with the requirements of the Stop-the-Clock decision and how to adapt the requirements of the EU ETS if this is the case. If ICAO does not adopt the GMBM, formally speaking, the full geographical scope of the EU ETS Directive will automatically apply again from 2017 onwards. However, it is not unlikely that the EU's 2014 decision on the limited exemption will be called into question and that a new discussion on how to amend the EU ETS will be triggered.

3. ICAO actions and measures towards reduction of international aviation emissions

As early as 2001, ICAO had decided that an emissions trading system (ETS) is the most appropriate instrument to address GHG emissions from international aviation. With Resolution A-33-7, Appendix I, the ICAO Assembly "endorses the development of an open emissions trading system" and "requests the Council to develop as a matter of priority the guidelines for open emissions trading" (ICAO 2001). Since then a lot of work has been carried out; however, no consensus was reached, so that in effect little formal progress had been made. It was only in 2010, at its 37th Assembly, that ICAO agreed a global aspirational goal of Carbon Neutral Growth from 2020 onwards (CNG 2020). Three years later, in 2013, ICAO established a working group for developing a Global Market-Based Measure (GMBM) to achieve this goal. According to its work program, the GMBM should be adopted in 2016 and come into force in 2020.

The main design elements of the GMBM are being discussed by the ICAO's Environmental Advisory Group (EAG) and by the Global Market-Based Measure Task Force (GMTF) established for developing the GMBM. Within EAG, a decision-making body, the core design features are being elaborated. The GMTF, an expert group within the CAEP, provides assistance on the developing rules for monitoring, reporting and verification (MRV) of CO_2 emissions and quality and eligibility criteria for offset units. So far, the GMTF has reached an agreement on a number of general principles to ensure the environmental integrity of offsets but is unlikely to provide specific recommendations on how to meet these requirements due to considerable uncertainties as to which types of units will be available post-2020.

The EU has highlighted the need for a sectoral emission reduction target for international aviation consistent with the global objective of below 2°C. It suggested setting the target at 10 % below 2005 levels by 2020 (Council of the European Union 2009) and supports a regular review of the environmental ambition (Council of the European Union 2015). In the EAG, the EU stresses the need to increase the ambition within ICAO and requests a review clause to allow the target to be strengthened in the medium term, e.g. to align it with the International Air Transport Association's (IATA) target of -50 % by 2050. Moreover, the EU is constructively engaging in discussions to ensure that the design of the GMBM actually enables that the CNG2020 target is met and is not undermined by exemptions.

At its 37th Assembly ICAO also initiated work for developing a CO_2 standard for new aircraft. The standard aims at reducing CO_2 emissions from aircraft by encouraging the integration of a full range of fuel efficient technologies and designs into aircraft development. The standard will be applicable across different aircraft categories, irrespective of aircraft purpose or capability.

In addition to the work on GMBM and CO_2 standards, the so-called basket of measures to reduce aviation CO_2 emissions (ICAO 2013a) also includes the development of guidance documents on operational measures and initiatives to promote the development and testing of alternative sustainable drop-in fuels from non-fossil sources.

4. Role and structure of ICAO and CAEP

International Civil Aviation Organization (ICAO)

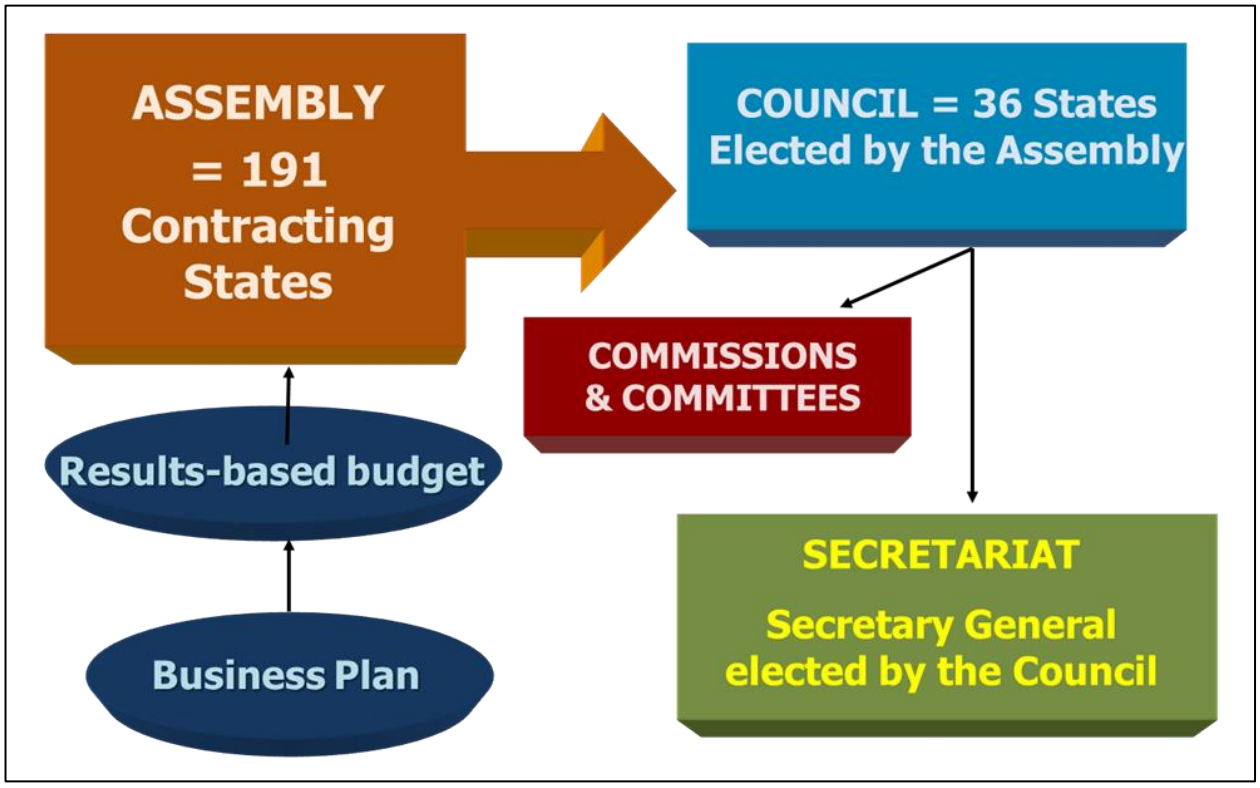
ICAO was established in 1944 with the Treaty of Chicago (Chicago Convention) and currently has 191 contracting states. At first the organisation mainly handled safety issues; later on, other aspects became important such as standards (SARPS = standards and recommended practices) and procedures (PANS = Procedures for Air Navigation Services). These SARPS and PANS are recorded in the official Annexes to the Treaty.

Once every three years an Assembly will be held in which the most important decisions will be taken or signed off. The daily order of business is dealt by the ICAO Council, presently chaired by O.B. Aliu from Nigeria. Its Secretary General of the ICAO Secretariat is elected by the Council.

The Council has 11 permanent members (Australia, Brazil, Canada, China, France, Germany, Italy, Japan, Russia, the United Kingdom and the United States). The other 25 members rotate every three years although some countries have been able to claim a more or less permanent seat by forming coalitions and rotating between them. Presently four additional European States (Norway, Poland, Portugal and Spain) are Council members.

The decisions in the Council and at the Assembly are taken by consensus; consequently, the standards are part of a compromise and therefore sometimes relatively lenient and some decisions take a long time until they are agreed. In principle States can file a difference to a certain rule if they do not fully agree. In such a case this rule does not apply for that particular State, but it might have consequences as other States may decide not to accept exempted aircraft on their territory.

Figure 2: Structure of ICAO



Source: Fox 2013.

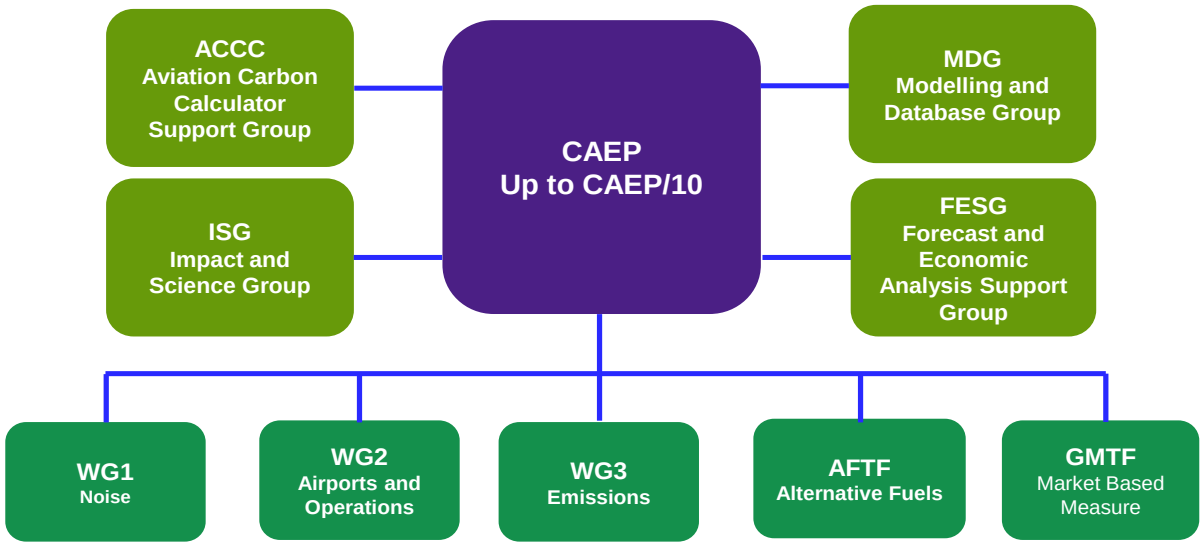
The Council has two sub-committees: the Air Navigation Committee (ANC) and the Air Transport Committee (ATC). In addition, there are several Committees or Panels for specific purposes, one of which is the Committee on Aviation and Environmental Protection.

Committee on Aviation Environmental Protection (CAEP)

The CAEP committee was established in 1983 and was preceded by two groups: one on noise and one on emissions. There are currently 23 members and 16 observers.[3] CAEP also meets once every three years, but has a CAEP Steering Group meeting once every year. During the meetings only the official representatives of the State or the observer organisation are allowed to speak. Official decisions are made by the members only. The rule is that if an organisation or a State has not attended the official meetings on three occasions, they are annulled from the group. This has occurred with the observer Nigeria.

CAEP has had three main working groups over the years: WG1 on noise, WG2 on operations and airports and WG3 on emissions. These groups, which include both member states and observer organisations, lay the ground work for future decisions. Apart from these groups CAEP has also had other groups (e.g. WG5 on market-based measures) and Task Forces (e.g. on Emissions Trading). Currently CAEP has two other working groups: one on alternative fuels and one on the GMBM. Apart from these, there are two additional very important support groups: the Models and Databases Support Group (MDG) and the Forecasting and Economic Analysis Support Group (FESG). Both groups play an important role as all proposed measures have to pass through an economic evaluation in which the costs of the measure are compared with the environmental gain. All measures to be taken have to fulfil the following criteria: the measure has to be technically feasible, economically reasonable and environmentally beneficial taking into account the relevant interdependencies (e.g. a noise or NO_x measure might introduce extra fuel burn).

Figure 3: Structure of CAEP



Source: ICAO 2015.

5. CAEP/10

For the CAEP meeting 29 information papers (IP) and 91 working papers (WP) were submitted. In general the IPs are not discussed, but this depends on the chair of the meeting. Sometimes he allows the authors to introduce the IPs. All WP will be discussed because they contain action points upon which the meeting is to decide. It is expected that Switzerland's representative, Urs Ziegler, will be re-elected as chair of CAEP/10 in the week before the meeting.

The working papers can be divided into four categories:

1. Papers drafted by the **working and sub-groups**. They show the **status of the work** and present points for decision-making. An important issue at CAEP/10 will be the decisions about the CO_2 standard for new aircraft types and types that are currently in production.
2. Papers drafted by the members and observers to present their **positions** on various subjects.
3. Papers drafted by the **groups and the states** concerning the **future work** programme.
4. Papers drafted by the **Secretariat** concerning **relations with other UN bodies** and other activities within the ICAO.

Main issues at stake

CO_2 standard

The decision on the **CO_2 standard** will constitute the main issue of the CAEP meeting. This standard is the result of 6 years of work. During the CAEP/9 cycle, an agreement was reached on how the standard would look. During the CAEP/10 cycle the costs and its effectivity was studied. WP27 presents the report of the CO_2 task group. In WP22 and WP23 the new text for Annex 16 Volume II will be proposed. It will imbed the CO_2 standard formally in the Annexes to the Conventions of Chicago and make it legally binding.

Once adopted, the CO_2 standard will be applied to new aircraft (and for in-production aircraft that will undergo a major change) and become effective between 2020 and 2023. Aircraft types which do not comply with the efficiency requirement will not receive a certificate and can thus not enter production unless the manufacturer improves the design of that aircraft type (new engines, different wings, etc.) so that it meets the efficiency requirements.

The standard will have no impact on aircraft that are already in service. It distinguishes between aircraft types which are already in production and newly designed aircraft types. For both groups of aircraft the standard differentiates between two size classes (above and below 60 tonnes of Maximum Take-Off Mass - MTOM). The requirements for aircraft already in production might be less stringent than those for new aircraft types because there are fewer options to improve the efficiency of an existing design.

The metric of the standard is based on fuel consumption per square metre of cabin space times kilometres flown. For the environmental and economic impact analysis, 10 different stringency options (SO1 to SO10) were assumed, whereby SO1 represents the lowest and SO10 the highest stringency level. Higher stringency levels require more advanced technology and more sophisticated design, which increases the price of the aircraft. This has to be balanced with fuel and cost savings due to higher efficiency during the operation of the aircraft.

The results of the impact analysis are presented in WP16 and IP06. The papers show that the optimal stringency option in which additional investment costs and fuel savings are balanced is around the stringency option 8 (SO8). The positions of various states and observers are provided in Table 1 below.

The aircraft and engine manufacturers association ICCAIA suggests a threshold of 70.265 tonnes instead of 60 tonnes for distinguishing between small and large aircraft. IATA criticizes the entire economic analysis. Furthermore they fear operating restrictions at airports based on the certification requirement. Both positions will not have much of a chance at this meeting.

Among the countries, the US promotes the highest stringency standards, even above those favoured by the EU, contrary to their usual practice. However, between the US and the EU a compromise can certainly be found. The positions of Brazil and Russia are more apart and less compatible. The EU, for example, suggests a stringency level above or equal to stringency option 6 (SO6) for new aircraft types with a MTOM of less than 60 t, while Brazil requests that the stringency level should be below or equal to SO5. It will be one of the major tasks of the CAEP/10 meeting to find a compromise in terms of the different minimum stringency levels that is acceptable to all.

Table 1 : Position of various states and observers regarding minimum CO_2 stringency

States/ Observer	In production < 60 tonnes MTOM	In production >60 tonnes MTOM	New Types **< 60** tonnes MTOM	New Types **>60** tonnes MTOM	WP Number #
Brazil	≤ S03	≤ SO5	≤ S05	≤ SO7	7
Russia		≤ S02		≤ S06	33
EU.	≥ S05	≥ S06	≥ S06	≥ S07	55
US	S05	S08-S09	S06	S08-S09	59
ICCAIA		S02	S05	S06	78
IBAC	S02		S05	S06	80
IATA					82
ISCA	S08	S010		S010	87
S01 to S010: Stringency Options 1 to 10					

Source: Authors' own compilation based on ICAO 2016.

Global Market-Based Measure

CAEP is also paying particular attention to the work carried out on the **Global Market-Based Measure** (GMBM). WP45 to WP53 are the reports of the GMTF and present the status of the work. However, no decisions will be made on GMBM at CAEP/10. This should be carried out in the EAG in 2016 in the coming months. The US position paper on this subject (WP64) addresses some interesting points such as:

1. Do **not try to achieve a fool-proof and perfect MRV system**; it is better to have something so that a start can be made soon and then to improve the system based upon practical experience.
2. Now is the **time to reduce options** so that the further analysis can be more focused.
3. The US expects that **further technical support from CAEP** will be necessary after the 2016 Assembly.

China favours the so-called accumulative approach for the allocation of the 2020 baseline emissions. This approach takes into account the emissions from 1992 onwards and would therefore be beneficial for those airlines that entered the market more recently. Along with some other States, particularly Russia and India, China also wants States to be accountable rather than the airlines (EU, US, Canada and IATA positions). However, they only took this position in late 2015 and it remains to be seen whether this was a tactical move ahead of the Climate Change Conference in Paris or a substantive position. The EAG meeting in January 2016 will provide first insights into the extent to which China and its allies will stand firm in this regard or show flexibility towards a global compromise.

IATA was very supportive of the development of a GMBM because they feared most a scattered development of several incompatible policies for addressing the GHG emissions of international aviation. They suggested both the development of a GMBM and a CO_2 emission target even before ICAO took the decisions to follow this route.

ICSA, the International Coalition for Sustainable Aviation, is the only environmental non-governmental organization (NGO) registered as observer under ICAO. However, they involve various NGOs which are active in the field of international aviation, including the Aviation Environment Federation (AEF), the International Council for Clean Transportation (ICCT) and Transport and Environment (T&E). ICSA is also supportive of the development of a GMBM in principle. However, they prefer emissions trading rather than offsetting,

emphasize the importance of high quality offsets to ensure environmental integrity and underline that ICAO's current target of CNG2020 is not sufficiently ambitious in terms of the challenge of climate change.

Even though no decision will be taken at CAEP/10 on the GMBM, it is expected that the report of the GMTF will provide the basis for statements and further discussion. Given the interlinkage of this issue with the EU's domestic policies on addressing the CO_2 emissions of aviation, further background on this issue is provided in Box 1.

Box 1 : Market-Based Measures

CAEP has been discussing market-based measures since 1995 (CAEP/3). During the CAEP/4 cycle, i.e. the three year period from CAEP/3 to CAEP/4, a Focal Point on Charges was appointed (J.W. Pulles from the Netherlands). Given the nature of the subject his role was very soon accompanied by a supporting (watch) group. This group studied the pros and cons of different charging methods to reduce aviation emissions. The group came to the conclusion that fuel taxation or emission-related route charges were the best method to tackle the CO_2 emissions of aviation. The report of the work was accepted at CAEP/4 (1998), but the conclusions needed further work. This led to the installation of WG5 on market-based measures. This group was in place during two CAEP rounds and resulted in the accepted conclusion that emissions trading was the best way forward for aviation. However, at the end of the second period (2004) differences between Europe and the rest of the world in terms of the actual approach to follow became apparent. At CAEP/6 it was decided that CAEP should draw up "Guidance on Emission Trading" for those States that wanted to introduce it. This was a first attempt to block the developments that then took place in Europe. This guidance was drafted in the specially formed Emission Trading Task Force.[4] It was possible to reach an agreement on most topics in the guidance document. However, one essential topic was prominent and that was the dispute about "mutual agreement". According to the US and IATA, emissions trading on international flights could only be introduced if both States on each end of the flight agreed to it. This point of view was supported by almost the entire Assembly. Only the European Countries disagreed and made a reservation. After this it became more and more difficult for the EU to hold its position on emissions trading. Legal actions were taken against it and the US Congress passed a law that forbade US airlines to take part in the EU ETS for aviation. Moreover, Chinese and Russian airlines did not comply with the EU ETS Directive and China took economic actions against Airbus.

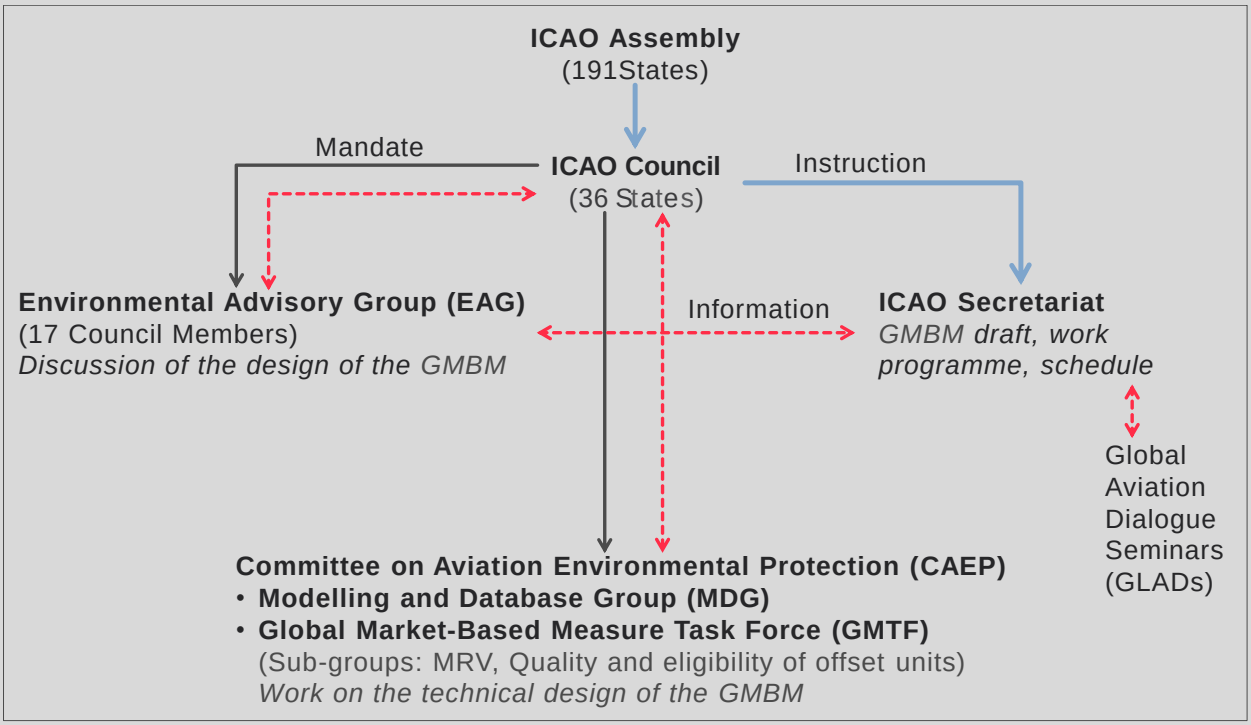
It was also decided in 2007 that CAEP would not concern itself with emissions trading for some time. This task was taken over by the Council itself. The 37th Assembly asked the Council to develop a framework and explore the feasibility of market-based measures for aviation. The Council commissioned several studies in 2011 and 2012. The Council decided on 9 November 2012 that the qualitative and quantitative analysis of the three options for a GMBM scheme evaluated by the Secretariat demonstrated that all three options were technically feasible and had the capacity to contribute to achieving ICAO's environmental goals, and further quantitative analysis of the three options needed to be undertaken to develop more robust and concrete conclusions. The following 38th Assembly, however, concluded that there was support from the aviation industry for a single global carbon offsetting scheme, as opposed to a patchwork of State and regional MBMs. Taking this into account, the Assembly asked the Council to develop concrete proposals for MBMs, paying particular attention to the potential implications of such measures for developing as well as developed countries in order to make a decision at the 39th Assembly in September 2016. In order to put this decision into practice, the Council established the Environmental Advisory Group (EAG), an internal group of council members to deal with this issue.

Three MBM options were initially scrutinized: an emissions trading scheme, an offset scheme and an offset scheme with revenue generation. Even though all three options are formally still on the table, most emphasis is currently devoted to the development of a

global offset scheme without revenue generation. The EAG has developed a so-called "Strawman" with possible elements that could be part of a GMBM for aviation. This Strawman gave rise to many issues which needed to be investigated further, for which help was sought from CAEP. Therefore the Global Market-Based Measures Taskforce (GMTF) was established; it held its first meeting in March 2014. The group has three sub-groups, one on the monitoring reporting and verification of such a system, a second is looking into the eligibility aspects of the offsets and a third is carrying out the technical and economic analysis.

The GMTF has provided substantial information to the monthly EAG meetings. However, up to now the EAG has not made a single decision, but has continued to ask for additional analysis. To overcome the impasse the president provided, at the end of 2015, a proposal for the Assembly text (with a concrete proposal) on this subject to be discussed at the EAG meeting in January 2016. This proposal supports the sectoral approach and even though it would mean that European airlines would have to offset more than their actual emissions above their 2020 level, this proposal seems very acceptable for Europe. With this proposal in mind, which is still far from being completed for adoption at the ICAO Assembly in autumn 2016, the EU needs to consider how it will continue with their Emission Trading System for aviation.

Figure 4: Role of different bodies in ICAO's process on GMBM development



Source: Authors' own compilation

Other issues

Other issues that will receive substantial attention will be the work on the **non-volatile particulate matter**. To reduce these emissions, an emissions standard is being developed which aims to encourage improved engine designs. This issue will be the subject of decision-making at CAEP/11 and will require an economic/effectivity analysis.

WP13 is one particular working paper worth mentioning in this context. This paper discusses the feasibility of the ICAO aspirational goal of **2% fuel-efficiency improvement per year**. The paper comes to the conclusion that this goal is unlikely to be achieved.

Role of the EU

The EU is an observer and therefore has no vote. Usually the EU position is coordinated in advance through several meetings in Brussels and through daily coordination meetings before and after the normal CAEP meeting. This usually leads to one coordinated position, although in a few cases individual EU countries have gone their separate ways. WP71 explains the EU's position on some items of the MRV process for the GMBM. The following issues are addressed: The EU

1. supports the **work on open issues** like the allocation of operators to Administrating States;
2. supports a **two-tiered approach** for monitoring whereby airline with small emission quantities do not have to comply with the MRV requirements to reduce their administrative burden;
3. is of the opinion that **verification should be done in three steps**: pre-verification, verification by an external third party and finally a check of the order of magnitude by the administrative authority;
4. supports the establishment of a **technical advisory body** to assist the Council on the eligible units;
5. thinks that **some vintages of units are questionable** and should therefore not be eligible as offsets; and
6. is of the opinion that the **registry should be global**, but that this option should be left open for those States or regions that already have such a system.

The role that EU Member States play depends very much on the knowledge of the Member States representatives of the process and of the subjects at stake. EU Member states that are usually very vocal in the meetings are the UK, France and the Netherlands. The EU observer plays also an important role, particularly because it is technically supported by the European Aviation Safety Agency (EASA).

6. Conclusions and recommendations for the ENVI delegation

CAEP/10 is an important meeting. It is expected that the CO_2 efficiency standard for new aircraft will be adopted. Higher efficiencies of aircraft will reduce GHG emissions compared to baseline projections. However, due to the strong traffic growth these efficiency improvements will not result in absolute emission reductions. They are, nevertheless, an important contribution to global efforts on addressing climate change because they reduce the aviation sector's demand for offset units. The ENVI delegation should therefore use opportunities in bilateral meetings with delegations from other countries as well as other opportunities to promote the adoption of an ambitious CO_2 standard and highlight the importance of such a standard as a contribution to global mitigation efforts.

Moreover, the reports from the working group on a GMBM will receive some attention, even though formally no decisions will be taken. The ENVI delegation should, nevertheless, use opportunities to underscore the importance of adopting a comprehensive, reliable and environmentally sound GMBM and reiterate the EU's readiness to cooperate with all other countries towards that goal.

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1 For more information, see Cames et al. (2015).

2 The share is expressed in relation to the RCP 2.6 scenario which would lead to a mean temperature increase of 1.6 ± 0.7 °C compared to pre-industrial levels by the end of the century. To achieve this, the scenario assumes a rapid decline of GHG emissions after peaking in 2020 and a complete decarbonisation of the world by 2090. Emissions of methane and N_2O also decrease but much more moderately.

3 CAEP members: Argentina, Australia, Brazil, Canada, China, Egypt, France, Germany, India, Italy, Japan, Netherlands, Poland, Russia, Singapore, South Africa, Spain, Sweden, Switzerland, Tunisia, the United Kingdom, Ukraine and United States.
CAEP observers: Greece, Indonesia, Norway, Saudi Arabia, Turkey, United Arab Emirates, ACAC, ACI (airports), CANSO (air navigation providers), the EU, IATA (airlines) IBAC (operators of small aircraft, business jets) ICCAIA (aircraft and engine manufacturers), ICSA (environmental groups), IFALPA (pilots) and the UNFCCC.

4 At the same time, there was also a task force that drew up guidance on local emission charges which were introduced in Sweden and Switzerland.

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