



**ASSEMBLY — 35TH SESSION**

**EXECUTIVE COMMITTEE**

**Agenda Item 15: Environmental Protection**

**MARKET-BASED OPTIONS CONCERNING ENGINE EMISSIONS**

(Presented by Egypt on behalf of ACAC States\*)

**SUMMARY**

The issue of emission reduction is related to the United Nations Framework Convention on Climate Change (UNFCCC) and the Kyoto Protocol. Developing countries were exempted from any obligation to reduce or limit their emissions and the Kyoto Protocol called upon the developed countries to deal with issue of emissions from international civil aviation through the International Civil Aviation Organization.

Member States of the Arab Civil Aviation Commission wish to draw the attention of the ICAO Contracting States that it is not possible to apply the principle of emissions trading between civil aviation and other sectors within the developing countries. The reason is that such sectors in the developing countries are not required under international conventions to reduce or limit their emissions. Accordingly, the Member States of the Arab Civil Aviation Commission, through this working paper, request the Contracting States of ICAO to comply with the UNFCCC and the Kyoto Protocol in their efforts to reduce emissions from international civil aviation, including in their application of market-based options, and to take into consideration the economic situation of developing countries in this regard. The international community should also apply in international civil aviation, the policies pursued to reduce or limit emission as in other fields.

Action by the Assembly in paragraph 7.

\* ACAC Member States include Jordan, United Arab Emirates, Bahrain, Tunisia, Saudi Arabia, Sudan, Syria, Iraq, Oman, Palestine, Qatar, Lebanon, Libya, Egypt, Morocco and Yemen.

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## 1. INTRODUCTION

1.1. Aircraft emit gases and particles directly into the upper troposphere and stratosphere. Such gases and particles have a significant impact on the composition of the atmosphere as they change the level of concentration of greenhouse gases, particularly CO<sub>2</sub>, ozone and methane. They also lead to the composition of thick contrails that may form cirrus clouds and cause climate change.

1.2. Considerable efforts are now being made to reduce emissions through a range of options, including the technological improvement of aircraft, engines and fuel consumption as well as the use of operational, regulatory and economic measures. Measures that have recently been the focus of efforts to reduce CO<sub>2</sub> emissions include market-based options.

1.3. This term market-based options refers to policy tools established to achieve environmental objectives at a lower cost and in a more flexible manner than the traditional regulatory measures. Such options fall into three main categories:

- a) emissions trade-offs;
- b) emissions-related taxes; and
- c) voluntary agreements.

## 2. ECONOMIC IMPACT OF MARKET-BASED OPTIONS

2.1. Market-based options will increase the operating costs for airlines. Cost increases arising from such operations will lead to higher fares and consequently lower demand. The extent and impact of such a reduction on the regional level will depend on price and demand elasticity and the impact of such higher prices on consumers. It is also expected that market-based options will lead to a response on the supply side by the industry. This may include the use of more fuel-efficient aircraft, operational improvements by airlines, the modernization of the air traffic system by service providers and further technological developments by manufacturers.

2.2. The environmental impact will be assessed by identifying the point at which the market-based options will reduce CO<sub>2</sub> emissions. Such impact will be reflected in the reduction in CO<sub>2</sub> emissions compared to the base case.

## 3. POSITION OF DEVELOPING COUNTRIES VIS-À-VIS THE GLOBAL APPLICATION OF MARKET-BASED OPTIONS

3.1. Developing countries maintain a strong position regarding any global implementation of market-based options, a measure which may adversely affect their economic development. Developing States believe that they have a "fundamental" moral right to be exempt from certain obligations to reduce or limit emissions. This right was recognized by the UN

Framework Convention on Climate Change and the Kyoto Protocol; the Preamble to the Convention, inter alia, states that:

"The Parties to this Convention,

.....

- Noting that the largest share of historical and current global emissions of greenhouse gases has originated in developed countries, that per capita emissions in developing countries are still relatively low and that the share of global emissions originating in developing countries will grow to meet their social and development needs,

.....

- Recognizing the special difficulties of those countries, especially developing countries, whose economies are particularly dependent on fossil fuel production, use and exportation, as a consequence of action taken on limiting greenhouse gas emissions,

.....

- Affirming that responses to climate change should be coordinated with social and economic development in an integrated manner with a view to avoiding adverse impacts on the latter, taking into full account the legitimate priority needs of developing countries for the achievement of sustained economic growth and the eradication of poverty,

.....

- Recognizing that all countries, especially developing countries, need access to resources required to achieve sustainable social and economic development and that, in order for developing countries to progress towards that goal, their energy consumption will need to grow taking into account the possibilities for achieving greater energy efficiency and for controlling greenhouse gas emissions in general, including through the application of new technologies on terms which make such an application economically and socially beneficial,"

3.2. In accordance with the Preamble to the UNFCCC and other provisions, Article 3, paragraph 1 of the Convention stipulates that:

"The Parties should protect the climate system for the benefit of present and future generations of humankind, on the basis of equity and in accordance with their common but differentiated responsibilities and respective capabilities. Accordingly, the developed country Parties should take the lead in combating climate change and the adverse effects thereof".

Article 3, paragraph 2, of the UNFCCC also provides that:

"The specific needs and special circumstances of developing country Parties, especially those that are particularly vulnerable to the adverse effects of climate change, and of those Parties, especially developing country Parties, that would have

to bear a disproportionate or abnormal burden under the Convention, should be given full consideration”.

3.3. The above considerations are all related to the UNFCCC. As for the Kyoto Protocol, annexed to the Convention, it does not require developing countries to limit or reduce their emissions. Article 2, paragraphs 2 and 3 provide that:

“The Parties included in Annex I shall pursue limitation or reduction of emissions of greenhouse gases not controlled by the Montreal Protocol from aviation and marine bunker fuels, working through the International Civil Aviation Organization and the International Maritime Organization, respectively.” (Article 2, paragraph 2)

"The Parties included in Annex I shall strive to implement policies and measures under this Article in such a way as to minimize adverse effects, including the adverse effects of climate change, effects on international trade, and social, environmental and economic impacts on other Parties, especially developing country Parties and in particular those identified in Article 4, paragraphs 8 and 9, of the Convention, taking into account Article 3 of the Convention. The Conference of the Parties serving as the meeting of the Parties to this Protocol may take further action, as appropriate, to promote the implementation of the provisions of this paragraph." (Article 2, paragraph 3)

3.4. It may therefore be concluded that:

- a) the 1992 UNFCCC and 1997 Kyoto Protocol placed a commitment on industrialized countries themselves to limit or reduce greenhouse emissions while they exempted developing countries;
- b) the Kyoto Protocol adopted by the Conference of Parties of the UNFCCC in December 1997 requires developed countries to continue limiting or reducing greenhouse emissions from aircraft through the International Civil Aviation Organization (ICAO) while taking into consideration the potential impact on developing countries;
- c) the Kyoto Protocol distinguishes between emissions from international civil aviation and from domestic civil aviation, as it calls on developed countries to continue limiting or reducing international civil emissions through ICAO (Article 2, paragraph 2 of the Protocol) while domestic civil aviation emissions are listed on the national goals of developed countries to bring about an overall emissions reduction from all sources by 5.2% during the period 2008 - 2012 compared to the 1992 levels and based on 6 specific greenhouse gases;
- d) ICAO's CAEP has called in its fifth meeting (Montreal, 8 - 17 January 2001) for further studies on the impact of market-based options on developing countries, and stated that the interests of developing countries should be taken into consideration during the implementation of such market-such options;

- e) most developing countries that are already exempt from the obligation to reduce emissions are members of ICAO which explores the various ways and methods to reduce emissions in accordance with Article 2, paragraph 2; and
- f) as the industrial and other sectors in the developing countries are under no obligation to reduce emissions, the principle of trade-offs or trading of emissions with other sectors is not feasible in these countries.

3.5. Based on the above considerations, the developing countries have no interest in adopting control measures for greenhouse gases from international civil aviation, unless such measures are proven to be beneficial to their economies or at least would not produce any adverse effects on them.

#### 4. IMPLICATIONS OF MARKET-BASED OPTIONS

4.1 ICAO is currently assessing the various market-based options to reduce CO<sub>2</sub> emissions from aviation. The focus has been on market-based options, as theoretical studies have shown that CO<sub>2</sub> emissions may be reduced at a lower cost using such options compared to other methods. Such options include emissions trading, levies (charges and taxes) and voluntary agreements that could be implemented at the regional and international levels.

4.2 The analysis made by the CAEP Forecasting and Economic Support Group (FESG) in ICAO shows that if an emissions reduction were to take place at a lower cost, the majority of such a reduction (70%) would have to be a result of a reduction in aircraft kilometres and revenue tonne-kilometres. The analysis also shows that technological advances allowing for improving fuel efficiency would provide the remaining part of the reduction (30%).

4.3 At a marginal cost for CO<sub>2</sub> of 45 USD per tonne, aircraft kilometres performed would be reduced approximately by 5% for Annex B States and approximately 4% for Non-Annex B States according to the forecast until 2010. This clear reduction in aircraft kilometres will be reflected in the size of fleets (6% and 5% respectively) and airline services.

4.4 Without entering into details, it is clear that the international implementation of market-based options will affect the developing countries. The change in kilometres performed by aircraft will also affect other air transport related activities such as tourism. Despite the fact that the impact of market-based options may be acceptable for certain countries, it could be much greater and less acceptable for other states and could affect their exports. International air transport contributes to the exchange of services, business and foreign trade. It is also a source of hard currency through transport services provided to tourists and air cargo.

**5. APPLICATION OF MARKET-BASED OPTIONS TAKING INTO ACCOUNT THE SITUATION OF THE DEVELOPING COUNTRIES AND INSURING THAT SUCH OPTIONS HAVE A MINIMUM ADVERSE IMPACT ON THESE COUNTRIES AND A MINIMUM IMPACT ON THE COMPETITIVENESS OF AIRLINES OF ANNEX B STATES**

5.5 The special characteristics of international civil aviation operations were undoubtedly the main reason for the fact that aircraft fuel was not included in the Kyoto Protocol. Aircraft engaged in international operations are considered mobile units that produce emissions, unlike factories and facilities which are considered fixed units. An aircraft may be owned by one state, take off from the territory of another state to land in a third state and cross the airspace of several states in one flight. Therefore, we see that the main problem is how to deal with international civil aviation emissions in the airspace or airports of countries other than the country of the aircraft. Now we may take a closer look at the options under discussion:

- a) The international civil aviation sector should implement a policy of limiting or reducing emissions as it is the case in other sectors. Annex B states should therefore shoulder their full responsibility in this regard as they produce 73 % of total emissions resulting from international civil aviation activities;
- b) Accordingly, the market-based options should be applied in such a way that their consequences and negative financial effects be the responsibility of Annex B states, specially with regard to levies;
- c) The door be left open for developing countries to implement certain options regarding trading and voluntary agreements as they may see in their interest among themselves or with Annex B states; and
- d) Developing countries would strive to take the necessary measures by implementing market-based or other options, in accordance with ICAO's declared policy, to reduce pollution for which they are responsible in light of their development of economic requirements.

5.2 In conclusion, it is of paramount importance to harmonize emissions reduction policies in international civil aviation with the Kyoto Protocol policies and principles which exempted developing countries from any commitment to limit or reduce emissions, and such principles will have to be respected. The interests of developing and poorer countries must be taken into consideration very carefully during the implementation of options to limit or reduce emissions including market-based options.

**6. SPECIAL CONSIDERATIONS FOR THE DEVELOPING COUNTRIES**

6.1 This working paper was presented by the Arab States, as developing countries, to CAEP/6 (Montreal, 2-12 February 2004). The meeting's attention was drawn to the fact that a regional developing country grouping is opposed to the measures that may be imposed upon

them when the Kyoto Protocol itself exempted them from emission reduction obligations. It requested that the economic situation of the developing countries should be taken into consideration in pursuing market-based options after an exhaustive exchange of views. The meeting agreed to a conclusion that all members support the need to take due account of the possible implications for the developing and developed states when considering market-based options. Members representing the developing countries called upon CAEP/6 to support the need to comply with the relevant provisions of the UNFCCC in the application of market-based options to reduce or limit emissions from international civil aviation, thus exempting developing countries from any obligation in this respect. In conformity with the spirit of the remarks by the President of the Council at the opening meeting of CAEP/6 in which he stressed that CAEP was not being asked to endorse or reject the implementation of certain market-based measures, and consequently should avoid becoming entangled in such discussions other members could not go along with the above recommendation. They were of the view that it raised issues that were beyond the terms of reference of CAEP, namely to assess the implications of applying market-based options and to provide information to the Council accordingly.

6.2 Based on the above discussion, the Arab States, as developing countries, submit this working paper to the 35<sup>th</sup> Session of the Assembly to consider its contents, including the technical and political aspects of the issue.

## 7. ACTION BY THE ASSEMBLY

7.1 The Assembly is invited to:

- a) reaffirm the need to maintain consistency and compliance with the Kyoto Protocol and the UNFCCC in the application of market-based options to reduce or limit emissions from civil aviation, by refraining from imposing any obligations on the developing countries in this regard; and
- b) endorse the arguments and requests presented in this working paper for their eventual inclusion in the *Consolidated Statement of Continuing ICAO Policies and Practices Related to Environmental Protection*.