

The impact of the inclusion of aviation into the EU ETS on the Caribbean island states

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Thesis abstract of “The impact of the inclusion of aviation into the EU ETS on the Caribbean island states”

In its attempt to further mitigate global climate change, the European Union recently included aviation activity into its carbon emissions trading scheme (the ‘EU ETS’). This thesis examines the impact of the inclusion of aviation into the EU ETS on Caribbean island states and, additionally, offers recommendation on how these Caribbean island states can deal with the issues that are expected to arise from the inclusion of aviation into the EU ETS.

By firstly determining the deficiencies in the EU ETS relevant to Caribbean island states as compared to the UNFCCC and Kyoto Protocol and, secondly, analyzing the legal and economic impact of the inclusion of aviation into the EU ETS on both airlines worldwide as well as Caribbean island states, this thesis finds that there is great uncertainty in the airline industry on the impact of the inclusion of aviation into the EU ETS. Nevertheless, the current EU ETS regime was not anticipated to have a significantly detrimental impact on the Caribbean economy. However, any reduction in the numbers of tourist arrivals and expenditures is economically disadvantageous to the Caribbean island states. Therefore, Caribbean island states should create a stronger and more independent position for themselves within the global climate change framework of the UNFCCC by having all 31 Caribbean island states become party to the UNFCCC and Kyoto Protocol and by working together to create a regional Caribbean ETS.

Résumé de thèse: « L’impact de l’introduction de l’aviation dans l’ETS UE au sein des Etats insulaires des Caraïbes ».

Dans sa tentative de limiter les changements climatiques au niveau planétaire, l’Union Européenne a récemment introduit le secteur qu’est l’aviation dans son schéma des émissions de carbone (« l’ETS UE »). Cette thèse a pour but l’étude de l’impact de cette introduction sur les Etats insulaires caribéens. En outre, cette thèse a également pour ambition d’émettre des recommandations sur les moyens de ces Etats caribéens afin qu’ils puissent apporter des solutions aux problèmes qui sont susceptibles de naître de l’introduction de l’aviation dans l’ETS UE.

Ainsi, dans un premier temps il s’agira de mettre en lumière les défaillances de l’ETS UE qui s’applique dans les Etats caribéens en comparaison avec le UNFCCC et le Protocole de Kyoto. Dans un second temps, cette thèse analysera l’impact légal et économique de l’introduction du secteur aviation dans l’ETS UE et ce, à la fois sur les compagnies aériennes à travers le monde, mais aussi dans les Etats des Caraïbes. L’étude démontrera l’existence d’une grande incertitude dans l’industrie des transporteurs du fait de l’introduction de l’aviation dans l’ETS UE. Cependant, le régime ETS UE tel qu’il est actuellement n’a pas été pensé en vue d’avoir un impact destructeur sur l’économie caribéenne. Néanmoins, il est avéré que toute réduction dans le nombre d’arrivées et de dépenses au sein de ces îles est un désavantage économique évident pour ces Etats insulaires. De ce fait, les Etats caribéens devrait réagir en mettant en place une position commune plus forte et plus indépendante qui défendrait leurs intérêts au sein du cadre du changement global du UNFCCC par l’adhésion de 31 Etats caribéens au UNFCCC et au Protocole de Kyoto tout en travaillant ensemble afin de créer un ETS régional caribéen.

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Chapter 1 – Introduction

As the 20th anniversary of the United Nations Framework Convention on Climate Change (UNFCCC) approaches, the international community continues to struggle to come to an agreement on the adequate measures for the reduction of greenhouse gas emissions. After its entry into force in 1994 through December 1997, the UNFCCC failed to accomplish concrete emissions reductions. Its Parties decided to adopt the Kyoto Protocol, which included more powerful, legally binding measures and set individual binding emission reduction targets. Within the framework of the UNFCCC, the Kyoto Protocol also suggests various means of carbon emission reductions.¹ In the execution of their Kyoto Protocol obligations, the European Union established a cap-and-trade system for greenhouse gas emissions within the EU territory called the ‘European Union Emissions Trading Scheme’ (EU ETS) on October 13, 2003.²

Furthermore, the Kyoto Protocol separated two distinct areas of carbon emissions from emissions that were to be nationally reduced, namely emissions from international aviation and marine bunker fuels. Multilateral measures dealing with the limitation or reduction of these areas of carbon emission should thereby be formulated by the International Civil Aviation Organization (ICAO) and the International Maritime Organization (IMO). However, progress towards such a multilateral agreement through ICAO had been exceedingly slow as, due to a lack of consensus by the Parties, ICAO could not reach any binding targets or objectives on carbon emission reduction.

¹ HEC Paris, "The European directive: To include aviation in the European CO₂ Emission Trading Scheme; consequences and strategic options for the aviation industry," (HEC Paris 2009) at 6.

² European Parliament and the Council of the European Union, "Commission Directive 2003/87/EC of 13 October 2003 establishing a scheme for greenhouse gas emission allowance trading within the Community and amending Council Directive 96/61/EC," in *Official Journal of the European Union* (2003). [EC Directive 2003]

As multilateral climate negotiations for both global and aviation specific carbon emission reductions struggled, stagnated or sank, impatient States made their move independently and unilaterally. In an ambitious and controversial turn of events, the European Union had started pushing the limits of its climate change laws. The EU's decision to include international aviation activity in its emissions trading scheme demonstrated the proverbial flexing of its market share muscles to stimulate climate action, and to substitute climate inaction, elsewhere.³ Including international aviation into the EU ETS was seen as a necessary first step into controlling the emissions from a rapidly growing aviation industry,⁴ as it threatened to cancel out the overall efforts in emissions reduction made by other sectors.⁵

Immediately, a major battle line had been drawn through the aviation sector. On the one hand, vociferous opposition to the scheme was expressed by the airline industry, as the inclusion of aviation into the EU ETS meant that a sector already consumed by their love for fuel efficiency was being forced to take on more than had been internationally agreed upon. On the other hand, the EU remarked that even though airplanes had undeniably become increasingly more fuel-efficient, absolute emissions from the aviation sector were forecast to continuously increase as well, eventually outpacing the reductions otherwise acquired through airplane fuel-efficiency. Furthermore, ticket prices did not accurately reflect the external costs of aviation emissions and their impact on climate change.⁶

³ Joanne Scott and Lavanya Rajamani, "EU Climate Change Unilateralism," *European Journal of International Law* 23, no. 2 (2012) at 469.

⁴ Kati Kulovesi, "'Make your own special song, even if nobody else sings along': International aviation emissions and the EU Emissions Trading Scheme," *Climate Law* 2, no. 4 (2011) at 535.

⁵ Annela Anger and Jonathan Kohler, "Including aviation emissions in the EU ETS: Much ado about nothing? A review.," *Transport Policy* 17 (2009) at 38.

⁶ See Kulovesi, *supra* note 4 at 538.

In an attempt to receive jurisprudential validation for their position, US airlines challenged the validity of the inclusion of aviation into the EU ETS in court. However, the advisory opinion of the Court of Justice of the European Union upheld this validity, albeit by relying on a series of environmentally motivated exceptions to the international law principle of state sovereignty upon which the international aviation regime is built, and was later affirmed by the final judgment on 21 December 2011.⁷

After the Court's affirmation and the official inclusion of aviation into the EU ETS on January 1st, 2012, opposition to the scheme took on a more political flavor. The Chinese government froze the final signing on an airplane purchase deal with a European aircraft manufacturer, and several other governments prohibited their airlines from participating in the scheme. Additionally, a declaration condemning the EU ETS was signed by 26 countries and presented to the ICAO's 194th Council session in November 2011. As the opposition held up and encouraging developments resulted from the 194th ICAO Council session, the European Commission decided to "stop the clock", indicating a deferral of the inclusion of international aviation into the EU ETS for one year, effectively postponing the compliance obligations and submission of allowances until April 2014. However, a sense of uncertainty surrounded the airline industry, as reflected by the sheer range of projections concluded by economic assessments on the impact of the EU ETS on airlines, with or without the one year deferral.

More than 7,500 kilometers across the Atlantic Ocean from the European Union, the impact of the EU ETS was also anticipated to be felt by the vulnerable economies of the

⁷ Brian F. Havel and John Q. Mulligan, "The Triumph of Politics: Reflections on the Judgment of the Court of Justice of the European Union Validating the Inclusion of Non-EU Airlines in the Emissions Trading Scheme," *Air & Space Law* 37, no. 1 (2012) at 5.

island states of the Caribbean. The small island states of the Caribbean are responsible for less than 1% of global carbon emissions and have practically no control over global carbon emissions or climate change mitigation. However, these islands are the most vulnerable to and the most impacted by global climate change. Phenomena such as a rise in sea level, increased temperatures, changes in rainfall patterns, increased intensity of storm activity, and their respective consequences, are some of the long term effects of global climate change the Caribbean island states are expected to be dealing with in the upcoming years.⁸ In addition to the long term effects of climate change, the measures implemented by other countries in order to mitigate climate change have another set of impacts on the Caribbean island states. The EU ETS, as the EU's mechanism to emissions reduction in the execution of their UNFCCC's obligations, is one of these climate change mitigation schemes with an anticipated short term impact on Caribbean island states.

The vulnerability of small island states to both the long term effects of global climate change and the short term impacts of climate change mitigation have been explicitly recognized and safeguarded by the UNFCCC. The impact of the implementation of climate change measures on small island states must be considered during the implementation of UNFCCC commitments by all Parties. Most importantly, the UNFCCC and Kyoto Protocol both include the principle of 'common but differentiated responsibilities and respective capabilities' to balance out historical and current emission responsibilities with a developed or developing country's capabilities. However, none of these protective measures have found their way into the EU ETS, to the detriment of the Caribbean island states.

⁸ Lisa Benjamin, "Climate change and Caribbean Small Island States: The State of Play," *The International Journal of Bahamian Studies* 16 (2010).

Most of the Caribbean island states depend to a certain degree on tourism, as tourism represents over 12% of GDP in the region.⁹ The tourism industry in the Caribbean is subsequently dependent on aviation or cruise ship traffic, with the EU market comprising on average 20% of tourist arrivals, ranging from 43% for Curacao to 2% for Puerto Rico. Caribbean island states have therefore become increasingly concerned with the impact that the inclusion of aviation into the EU ETS may have on the global airline industry, and consequently on their tourism sector and small island state economies.

This thesis seeks to analyze the legal and economic impact of the EU ETS on Caribbean island states, and to provide solutions to the issues arising from this development in climate change mitigation. In doing so, I have taken a predominantly doctrinal approach to the subject, with inter-disciplinary, comparative and historical aspects.

Chapter 2 provides a brief overview of the history of the EU ETS as the EU's mechanism for greenhouse gas emission mitigation in the execution of the EU's UNFCCC and Kyoto Protocol climate change commitments, and the recent inclusion of aviation into the scheme. Chapter 3 analyzes the impact of the EU ETS on certain players of the global aviation industry, as well as the legal and economic impact on airlines worldwide. Chapter 4 accounts the progression of global opposition against the EU ETS and the EU's decision to postpone the compliance obligations and submission of allowances for international aviation until April 2014. Chapter 5 determines the deficiencies in the EU ETS relevant to developing states as compared to the UNFCCC and Kyoto Protocol and proposes revisions in order for the EU ETS to be in compliance with the principles of the UNFCCC and Kyoto Protocol. Chapter 6 provides a general introduction to the Caribbean, establishes the different legal

⁹ Laurel Pentelow and Daniel J. Scott, "Aviation's inclusion in international climate policy regimes: Implications for the Caribbean tourism industry," *Journal of Air Transport Management* 17, no. 3 (2011).

positions of Caribbean island states in relation to the UNFCCC and Kyoto Protocol, analyzes the legal and economic impact of the EU ETS on Caribbean island states and provides solutions for Caribbean island states to the issues arising from the inclusion of aviation into the EU ETS. Finally, chapter 7 concludes that the current EU ETS regime will not have a significant detrimental impact on the Caribbean economy, but in order for the Caribbean island states to become less dependent of third party climate change mitigation measures, all Caribbean island states should become party to the UNFCCC and Kyoto Protocol, and create a regional Caribbean ETS.

Chapter 2 – The history of the European Union Emissions Trading Scheme

On January 1st, 2005, the world's largest emission trading system for the trading of greenhouse gas emissions came into operation in the European Union: the European Union Emissions Trading Scheme (hereinafter the "EU ETS").¹⁰ The purpose of the EU ETS is to reduce greenhouse gas emissions in order to attain its emission targets as per the UNFCCC and Kyoto Protocol and to mitigate future climate change.¹¹ To reach these goals, the EU ETS would start out by covering the greenhouse gas emissions from energy intensive industries within the EU territory.¹² In December 2006, the European Commission released a Proposal to include greenhouse gases emitted from both the domestic as well as the international aviation industry into the EU ETS.¹³ As per January 2012, all carbon emissions emitted during flights entering into or departing from an airport within the territory of an EU Member State are subject to the EU ETS.

The UNFCCC framework and the Kyoto Protocol have both been conducive, if not essential, to the development and implementation of the EU ETS. It is therefore imperative to explore the development of these two treaties before looking further into the progression of the EU ETS and the controversy surrounding the inclusion of aviation into its scheme.

¹⁰ European Commission, "Emissions Trading System (EU ETS)," online:
http://ec.europa.eu/clima/policies/ets/index_en.htm.

¹¹ See European Parliament and the Council of the European Union, *supra* note 2.

¹² See Anger and Kohler, *supra* note 5.

¹³ European Commission, "Proposal for a Directive of the European Parliament and of the Council amending Directive 2003/87/EC so as to include aviation activities in the scheme for greenhouse gas emission allowance trading within the Community," ed. Environment (2006).

1. The United Nations Framework Convention on Climate Change

The UNFCCC¹⁴ (United Nations Framework Convention on Climate Change) was negotiated at the United Nations Conference on Environment and Development in Rio de Janeiro during the “Earth Summit” in June 1992. The Convention entered into force on March 21, 1994 and has currently been ratified by 195 Parties (194 States and 1 regional economic integration organization).¹⁵

The purpose of this Convention is set out in article 2: “to achieve stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system”.¹⁶ The Convention sets out how to tackle global warming and creates the framework within which the Kyoto Protocol would later be developed.¹⁷ However, the Convention is primarily a framework convention as it only addresses the problem of global warming and greenhouse gases and establishes ‘commitments’ in order to protect the climate system. It does not set out any binding limits or specific targets to greenhouse gas levels or emissions.

Because of the imbalance in contribution to the current state of greenhouse gas levels between developed and developing countries, the concept of ‘common but differentiated responsibilities and respective capabilities’ is introduced in the Convention.¹⁸ The preamble of the Convention notes that the “largest share of historical and current global emissions of

¹⁴ United Nations, "United Nations Framework Convention on Climate Change," (1992). [UNFCCC]

¹⁵ United Nations, "Status of Ratification of the UNFCCC," online: (2012) http://unfccc.int/essential_background/convention/status_of_ratification/items/2631.php. [Status of Ratification of the UNFCCC]

¹⁶ See UNFCCC, *supra* note 14.

¹⁷ SFW, "The Kyoto Protocol and the EU Emissions Trading Scheme," online: (2012) http://www.sfwltd.co.uk/WhatWeDo/ClimateSoftware/Pages/Kyoto_and_EUETS.aspx.

¹⁸ The concept of “common but differentiated responsibilities and respective capabilities” shall be further discussed in Chapter 5.1, ‘The UNFCCC’ on page 61.

greenhouse gases has originated in developed countries [...]”.¹⁹ Within the Convention, the ‘developed’ countries, those that have most contributed to and most benefited from the build-up of greenhouse gases in the atmosphere, carry the most ‘historical’ responsibility.²⁰ In turn, the developed countries bear greater responsibilities, such as the protection from and assistance to ‘developing’ countries regarding “the adverse effects of climate change and the impact of the implementation of response measures”.²¹

It should be noted that the UNFCCC is only a framework Convention. Therefore, it does not expressly state whether or not the emissions from the aviation industry are covered by the Convention, or how, as its purpose is to lay down the framework upon which climate change mitigation can be built. Within this framework, the Kyoto Protocol has been created to set out detailed provisions concerning the reduction of anthropogenic carbon dioxide equivalent emissions.

2. The Kyoto Protocol and the Doha Amendment

Within the framework set by the UNFCCC, the Kyoto Protocol to the Convention was created in December 1997. After the ratification of the Protocol by 55 States that together accounted for at least 55% of total carbon dioxide emissions for 1990 of the Parties included in Annex I to the UNFCCC Convention, the Kyoto Protocol entered into force on

¹⁹ See UNFCCC, *supra* note 14.

²⁰ Kelly McManus, "The principle of ‘common but differentiated responsibility’ and the UNFCCC," online: (2009) Climatico, http://www.climaticoanalysis.org/wp-content/uploads/2009/12/kmcmanus_common-responsibilities.pdf.

²¹ See UNFCCC, *supra* note 14 at art. 4 sub 4, sub 8 and sub 10.

February 16, 2005. At present, there are 192 Parties (191 States and 1 regional economic integration organization) to the Protocol.²²

For the further progression of this thesis, it is important to note that several countries were expressly excluded from the application of the Protocol during the process of declaration and ratification, namely the Faroe Islands, the islands of the former Netherlands Antilles, Aruba, Tokelau and the Territories of the French Republic to which the Treaty establishing the European Community is not applicable.²³

The purpose of the Kyoto Protocol is the same as the UNFCCC framework convention. However, the Protocol sets out specific obligations regarding the levels of reduction of greenhouse gas emissions to its Parties²⁴ and binding targets for the reduction of anthropogenic carbon dioxide equivalent emissions, not controlled by the Montreal Protocol, during the first quantified emission limitation and reduction commitment period from 2008 to 2012.²⁵²⁶

This commitment period has since been extended by the Doha Amendment, as adopted during the eighth session of the Conference of the Parties in Doha, Qatar, in December 2012. The Amendment is still subject to acceptance by the Member States of the

²² UNFCCC, "Status of Ratification of the Kyoto Protocol," online: (2012) http://unfccc.int/kyoto_protocol/status_of_ratification/items/2613.php. [Status of Ratification of the Kyoto Protocol]

²³ Ibid.

²⁴ The six greenhouse gases covered by the Kyoto protocol are carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydro fluorocarbons (HFCs), per fluorocarbons (PFCs) and sulphur hexafluoride (SF₆).

²⁵ United Nations, "Kyoto Protocol to the United Nations Framework Convention on Climate Change," (UNTS1997) at art. 3 sub 7. [Kyoto Protocol]

²⁶ A second commitment period has been negotiated during the UN climate conference in Durban in December 2011. The new international climate treaty has been dubbed "the Durban Platform" and should be formalized by 2015. Holman Fenwick Willan, "The UNFCCC's Durban platform explained," online: (2012) <http://www.hfw.com/publications/client-briefings/the-unfccc-durban-platform-explained>. UNFCCC, "Establishment of an Ad Hoc Working Group on the Durban Platform for Enhanced Action (Advance unedited version)," online: (2011) http://unfccc.int/files/meetings/durban_nov_2011/decisions/application/pdf/cop17_durbanplatform.pdf.

Kyoto Protocol. This amendment establishes, among other things, the second commitment period to the Kyoto Protocol from January 1, 2013 through 2020, sets out the greenhouse gas emission reduction pledges of the Parties by 2020.²⁷ In Annex A of the Kyoto Protocol, the six greenhouse gases and the sectors and source categories as covered by the Protocol are outlined. Once accepted, the Doha Amendment shall amend the list of greenhouse gases covered by the Kyoto Protocol with the addition of nitrogen trifluoride (NF₃). The Kyoto Protocol also promotes the formulation and implementation of national and regional programs containing measures to mitigate climate change and measures to facilitate adequate adaptation to climate change.²⁸

Important to the aviation sector is the distinction between emissions from domestic aviation and international aviation. Emissions from domestic aviation are included in the individual targets for national emissions, as covered by the “Transport” section under “Fuel Combustion” in Annex A. These emissions are to be included in the national inventory of each Party. However, limitation or reduction regarding the emissions from (international) aviation bunker fuel, as covered in article 2 sub 2 of the Protocol, is to be pursued by working through ICAO.²⁹ This article suggests a ‘preference’ for finding a multilateral solution through ICAO, but it does not require that emissions reduction be achieved solely through ICAO³⁰, as endorsed by the Court of Justice of the European Union.³¹

²⁷ United Nations, "Doha amendment to the Kyoto Protocol," *UNTS* (2012) at para. C, amendment to art. 3(1bis), para. A, amendment to Annex B of the Kyoto Protocol and para. B, amendment to Annex A of the Kyoto Protocol.

²⁸ See Kyoto Protocol, *supra* note 25 at art. 10 sub b.

²⁹ Ibid, article 2 sub 2, “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.”

³⁰ Court of Justice of the European Union, "ATAA v U.K. (Opinion of the Advocate General)," in *European*

3. ICAO and its progress on climate change issues

The International Civil Aviation Organization (ICAO) is a specialized agency of the United Nations established in 1944 by the Chicago Convention in order to promote the safe and orderly development of international civil aviation throughout the world. ICAO's climate change issues and environmental activities are primarily undertaken through the Committee on Aviation Environmental Protection (CAEP). The CAEP assist the Council in formulating new policies and adopting new standards on aircraft noise and aircraft emissions.³²

From the creation of the Kyoto Protocol in 1997 and its subsequent entry into force in 2005, the Protocol has appointed ICAO as the 'preferred' venue through which the Parties should pursue the limitation or reduction of international aviation emissions. By that time, ICAO had already started investigating the climate change impact of aviation with the special report "Aviation and the Global Atmosphere", produced by the IPCC in 1999.³³

The road to an open emissions trading system has not been smooth. During the 2001 ICAO Assembly, ICAO endorsed the development of an open emissions trading system.³⁴ However, in the 2004 ICAO Assembly, ICAO decided to no longer pursue the development of a global aviation-specific emission trading system but instead to endorse the further development of an open emissions trading system for international aviation. Additionally, the

Court reports 2011 (2011) at para. 183-84. [ATAA v U.K. (Opinion)]

³¹ Court of Justice of the European Union, "ATAA v U.K. (CJEU Judgment)," in *European Court reports 2011*, 21 December 2011 (Court of Justice of the European Union, 2011) at para. 74-77. [ATAA v U.K. (CJEU Judgment)]

³² International Civil Aviation Organization, "Committee on Aviation Environmental Protection," online: (2013) <http://www.icao.int/environmental-protection/pages/CAEP.aspx>.

³³ Intergovernmental Panel on Climate Change, "Aviation and the Global Atmosphere," (1999).

³⁴ International Civil Aviation Organization, "Resolution A33-7: Consolidated statement of continuing ICAO policies and practices related to environmental protection, Appendix I: Market-based measures regarding aircraft engine emissions," ed. International Civil Aviation Organization (2001).

Assembly requested the Council to provide guidance consistent with the UNFCCC process for use by States in the incorporation of international aviation emissions into their emissions trading systems. It also urged States not to implement any unilateral implementation of greenhouse gas emission charges prior to the 2007 Assembly.³⁵ The 2007 Assembly Resolution repeated that States should refrain from implementing a unilateral emissions trading system and urged States not to implement an emissions trading system without the mutual agreement from the States whose aircraft operators were affected by it.³⁶ The most recent Assembly Resolution in 2010 shows ICAO creating guiding principles for aviation market-based measures, requesting the Council for the development of a framework for market-based measures in international aviation and asks States to review existing market-based measures are consistent with ICAO's guiding principles.³⁷ However, these guiding principles do not entail binding measures.

In conclusion, even though a number of initiatives have been launched by ICAO and the development of an open emissions trading system for international aviation, albeit slow, is progressing and in 2010 has reached the level of 'guiding principles', so far no binding measures for the limitation or reduction of emissions from international aviation have been agreed upon through ICAO.

In the absence of consistent progress in the creation, or adoption, of an open emissions trading system, and upon making a formal reservation to the ICAO Assembly

³⁵ International Civil Aviation Organization, "Resolution A35-5: Consolidated statement of continuing ICAO policies and practices related to environmental protection, Appendix I: Market-based measures regarding aircraft engine emissions," in *A35-5*, ed. International Civil Aviation Organization (2004). The EU has made a formal reservation to this 2004 resolution.

³⁶ International Civil Aviation Organization, "Resolution A36-22: Consolidated statement of continuing ICAO policies and practices related to environmental protection, Appendix L: Market-based measures, including emissions trading," ed. International Civil Aviation Organization (2007).

³⁷ International Civil Aviation Organization, "Resolution A37-19: Consolidated statement of continuing ICAO policies and practices related to environmental protection – Climate change," in *A37-19*, ed. International Civil Aviation Organization (2010).

resolution A35-5, the EU decided to include international aviation into their UNFCCC, Kyoto and ICAO compatible emissions trading scheme.

4. The EU Directive 2003/87/EC

Established by the EU Directive 2003/87/EC of October 13, 2003³⁸, the European Union carbon emission trading scheme was the EU's means of jointly meeting its greenhouse gas emissions reduction obligations under the Kyoto Protocol "with the least possible diminution of economic development and employment".³⁹ The European Commission preferred this market-based instrument at Community level over taxes or charges.⁴⁰ The EU ETS is applicable to all EU member states, as well as Iceland, Liechtenstein and Norway.

In an emissions trading scheme such as the EU ETS, the total amount of greenhouse gas emissions allowed within a certain territory is limited, or capped, in order to maintain greenhouse gas emissions within a certain period of time at a certain level. Tradeable permits, or allowances, represent the right to emit a certain amount of greenhouse gases and are allocated by the appropriate authority to polluters based on, for example, their historical emissions. The ownership of such a permit allows the owner to emit the corresponding amount of greenhouse gases. In the event the owner emits less than his allocated permits allow, he may sell the remaining permits to other polluters (within the same trading scheme) who need more permits to cover their emitted greenhouse gases, creating a positive incentive to emit less. Adequate penalties are imposed on polluters who cannot surrender enough permits to cover their emitted greenhouse gases after the time period has ended.

³⁸ See EC Directive 2003, *supra* note 2.

³⁹ See EC Directive 2003, *supra* note 2 at 2, 'whereas', number 5.

⁴⁰ See European Commission, *supra* note 13.

In order to reduce the level of greenhouse gas emissions within a territory, the allocated permits will be limited. This limitation creates a shortage of permits, driving up its price, determined through the mechanisms of supply and demand in a competitive market. Polluters without enough permits will have to find a way to reduce their emissions, or buy permits from other polluters. At the same time, polluters are encouraged to find ways to reduce their greenhouse gas emissions so they can sell their excess permits.

The EC Directive notes that the EU ETS is “compatible with the UNFCCC and the Kyoto Protocol” and “should be reviewed in the light of developments in that context”.⁴¹ Likewise, the holding, transfer and cancellation of allowances are done in such a manner as to “ensure that there are no transfers incompatible with obligations resulting from the Kyoto Protocol”.⁴²

However, the manner of legal implementation of the EU ETS in EU law makes the scheme independent of the Kyoto Protocol. The initial three-year trial period from 2005 to 2007 was not required by the Protocol, and even though the Kyoto Protocol only provided for a first quantified emission limitation and reduction commitment period from 2008 to 2012⁴³, the EU ETS will not be limited by this period and will continue after 2012.⁴⁴ However, matters such as the transfer of allowances to another EU Member State would still involve the corresponding adjustments of assigned amount units as under the Kyoto Protocol.⁴⁵

The 2003 Directive covers all six greenhouse gases also covered by the Kyoto Protocol, their emissions to be calculated as the equivalent of one metric tonne carbon

⁴¹ See EC Directive 2003, *supra* note 2 at 2, ‘whereas’, number 22.

⁴² See EC Directive 2003, *supra* note 2 at art. 19 sub 3.

⁴³ Before the Doha Amendment was accepted in December 2012.

⁴⁴ A. Denny Ellerman and Barbara K. Buchner, “The European Union Emissions Trading Scheme: Origins, Allocation, and Early Results,” *Review of Environmental Economics and Policy* 1, no. 1 (2007).

⁴⁵ See EC Directive 2003, *supra* note 2 at 2, ‘whereas’, number 10.

dioxide, requiring emitters to surrender one allowance per metric ton of carbon emitted. The 2003 Directive limits the scheme to specific types of ground installations within the EU territory as provided in Annex I. Installations used for research, development and testing of new products and processes are not covered. Small emitters are excluded from the scheme.

5. The EU Directive 2008/101/EC

The global aviation industry has been forecast to keep growing, and with it, its carbon emissions. Aviation accounts for a modest 2 – 3% of total global CO₂ emissions, of which international flights are responsible for 62% of these emissions. ICAO expects that passenger traffic is to grow at an average of 4.8% per year through the year 2036.⁴⁶

According to the European Commission, the growth of the aviation industry and its emissions would threaten to cancel out the efforts done to mitigate the climate change by the reduction of carbon emissions in other industries within the EU ETS. Therefore, after the introduction and establishment of the EU ETS on greenhouse gases emitted by specific types of ground installations within the EU territory, the Commission announced that it intended to include the aviation industry in the scheme. In December 2006, the official Proposal was released by the EC.⁴⁷

The EU Directive 2008/101/EC⁴⁸ amends the EU Directive 2003 to the extent that emissions produced by both domestic and international aviation from flights entering into or departing from an airport within the territory of an EU Member State to which the Kyoto

⁴⁶ International Civil Aviation Organization, "ICAO Environmental Report 2010," (ICAO2010) at 18, 31, 38.

⁴⁷ See European Commission, *supra* note 13.

⁴⁸ European Parliament and the Council of the European Union, "Commission Directive 2008/101/EC of 19 November 2008 amending Directive 2003/87/EC so as to include aviation activities in the scheme for greenhouse gas emission allowance trading within the Community " *Official Journal of the European Union* L 8/3, at art. 3 sub b(r) (2009). [EC Directive 2008]

Protocol applies, are covered by the scheme. Article 2 sub 2 of the Kyoto Protocol states that the limitations and reductions of emissions from international aviation are to be pursued through ICAO. However, the EU noted that ICAO's Resolution 35-4 endorsed open emissions trading and the incorporation of such emission trading schemes for international aviation by States and has included international aviation into the EU ETS accordingly.⁴⁹ Even so, because international aviation emission reductions are not provided for by the Kyoto Protocol, and therefore not covered by the Kyoto targets or allowances, the aviation industry is able to buy allowances from other sectors, but they may only sell their EU ETS allowances amongst themselves.⁵⁰⁵¹

The inclusion of aviation is on a non-discriminatory basis: the total amount of emissions from the entire flight, be it domestic or international, from every airline, be it EU or non-EU based, entering into or departing from an airport within the territory of an EU Member State⁵² are covered by the EU ETS. Commercial airlines with less than 243 flights per "three consecutive four-month periods",⁵³ or with a total annual emissions lower than 10.000 tonnes per year,⁵⁴ are excluded from the scheme by the *de minimis* rule. Aircraft with a certified take-off mass of less than 5700 kg and flights relating to search and rescue, firefighting flights, humanitarian flights and emergency medical service flights are excluded as well.⁵⁵

⁴⁹ See European Commission, *supra* note 13.

⁵⁰ See Anger and Kohler, *supra* note 5.

⁵¹ See EC Directive 2008, *supra* note 48.

⁵² Flight to and from Iceland, Liechtenstein and Norway are also covered by the scheme.

⁵³ See EC Directive 2008, *supra* note 48 at 3, 'whereas', number 18.

⁵⁴ Ibid at Annex, art. 1 sub J.

⁵⁵ Ibid at Annex, art. 1 sub C and sub H.

The Directive appoints a single Member State to each domestic and international aircraft operator who will be responsible for regulating the emission allocations for and compliance with the requirements of the Directive by that aircraft operators, based on whether an operating license to that aircraft operator was issued by that Member State, or if most of the emissions in a base year of that aircraft operator are attributable to that Member State.⁵⁶

Allowances are calculated based on historical emissions of the airline, namely the mean average of estimated annual emissions for the years 2004, 2005 and 2006 of all flights that would be covered by the EU ETS to and from European airports.⁵⁷ To that purpose, all aircraft operators falling under the scope of the EU ETS must monitor and report their greenhouse gas emissions starting 2010. They must have submitted their monitoring plans to their responsible Member State by August 31, 2009, monitor their tonne-kilometers in 2010 and annually monitor their emissions from 2010 onwards.⁵⁸

In the 2012 trading period (from 1 January 2012 to 31 December 2012), the aviation emissions are set at a 97% cap of the historical emissions, to be allocated to aircraft operators. In this trading period, 15% of these allocated allowances shall be auctioned, and 85% will be allocated for free. In the subsequent trading period, from 1 January 2013 to 31 December 2020 (Phase III of the EU ETS as a whole), 95% of historical emissions shall be allocated to aircraft operators.⁵⁹ 15% of the allowances will be auctioned, 3% will be set aside in a special reserve and 83% will be allocated for free.⁶⁰

⁵⁶ Ibid at 5, 'whereas', number 21 and 26, and art. 18a.

⁵⁷ Ibid at art. 1 sub 3.

⁵⁸ Ibid at para. 15.

⁵⁹ Ibid at art. 1 sub 4.

⁶⁰ Ibid. This percentage may be increased as part of the general review of EC Directive 2008/101/EC.

A special reserve is created for new entrants and fast growers⁶¹ within the aviation industry so as not to withstand or impede their entry and growth. In the 2013-2020 trading period, 3% of all allowances to be allocated shall be set aside in this special reserve.⁶²

At the end of each trading period, one allowance per metric ton of carbon emitted during that trading period are to be surrendered by the aircraft operator to the responsible Member State. Penalties of €100 per tonne of CO₂ emitted shall be imposed on non-compliant aircraft operators.⁶³

The aviation industry was set to surrender their allowances equivalent to their total annual emissions for the 2012 trading period by April 30, 2013⁶⁴, but on November 12, 2012, the EU announced a “stop the clock” for the international flights within the scheme.⁶⁵

⁶¹ Ibid at art. 3f sub b. “An aircraft operator whose tonne-kilometer data increases by an average of more than 18 % annually between the monitoring year for which tonne-kilometer data was submitted under Article 3e(1) in respect of a period referred to in Article 3c(2) and the second calendar year of that period.”

⁶² Ibid, at art. 3f.

⁶³ Ibid at art. 14.

⁶⁴ Ibid at art. 10.

⁶⁵ More on the EU’s “Stop the Clock” in Chapter 3d - Air carriers drop routes.

Chapter 3 – The global impact of the EU ETS

As the governments protest the inclusion of aviation into the EU ETS from a political point of view due to its unilateral and extraterritorial imposition, the airlines add their voices to the opposition as well. However, after the initial shock and subsequent threats of retaliation, the inclusion of aviation into the EU ETS is still standing, if momentarily suspended by the EU's own decision to "stop the clock". Unless ICAO creates a (to the EU satisfactory) global solution to the reduction of aviation's carbon emission in its 38th General Assembly, the EU ETS shall come into effect from 2013 onward.⁶⁶ In order to prepare themselves for, or against, the EU ETS, countries and airlines alike have analyzed the effects and impacts the ETS is predicted to have on their States, economies and industries.

1. The impact on the global aviation industry

Even though airlines are the only sector of the aviation industry directly included in the EU ETS, other players in the industry are also affected by the scheme.

a. Aircraft manufacturers

Discriminatory treatment of European aircraft manufacturers was initiated in retaliation to the inclusion of aviation into the EU ETS, when the Chinese government suspended an aircraft deal worth up to \$14 billion from European aircraft manufacturer Airbus, which would force Airbus to put off part of a production increase that would create

⁶⁶ European Commission, "Stopping the clock of ETS and aviation emissions following last week's International Civil Aviation Organisation (ICAO) Council," online: (2012) http://europa.eu/rapid/press-release_MEMO-12-854_en.htm.

1.000 jobs.⁶⁷ Despite the governmental freeze, the largest carrier in Asia by fleet, China Southern Airline, has signed an acquisition agreement with Airbus for 10 A330-300 aircraft in December 2012, after China Eastern Airlines ordered 60 A320 aircraft in November 2012.⁶⁸

b. Airports

Depending on the measures airlines will take to avoid EU ETS charges, EU airports may also feel the impact of the EU ETS. Airlines with hubs or stop-overs at EU airports will be most affected by the scheme and may pressure airports to improve their operational procedures and ground infrastructure in order to save fuel and reduce emissions.⁶⁹

c. Air navigational services

Another fuel, and therefore emissions, saving measure is the improvement of air navigational services, such as the defragmentation of airspace and the implementation of new technology. The Single European Sky (SES) initiative, a project launched in 1999 by the European Commission in order to harmonize the European airspace and reform the air traffic management by moving away from 38 national boundaries and 63 air traffic control centers to the use of functional airspace blocks according to traffic flow,⁷⁰ is claimed to be able to

⁶⁷ Reuters, "Europe's Airbus expressed optimism it could rescue dozens of deliveries of wide-body passenger jets to China after the European Union agreed to freeze a carbon emissions scheme fiercely opposed by Beijing," online: (2012) <http://www.reuters.com/article/2012/11/13/uk-china-airshow-airbus-idUSLNE8AC02420121113>.

⁶⁸ China Daily, "China Southern inks Airbus A330 purchase," online: (2012) http://www.chinadaily.com.cn/cndy/2012-12/06/content_15990555.htm.

⁶⁹ See HEC Paris, *supra* note 1 at 14.

⁷⁰ International Air Transport Association, "Fact Sheet: Single European Sky (SES)," online: (2012) http://www.iata.org/pressroom/facts_figures/fact_sheets/pages/ses.aspx.

save the airline industry 50.000 metric tons of CO₂ and 10 million liters of fuel annually⁷¹. However, despite this tempting prospect, the initiative has “barely made it off the drawing board in over 20 years”⁷². Comparable air navigational service initiatives are on their way in the US (NextGen) and Asia (the Seamless Asian Sky).

d. Fuel suppliers

In an effort to further reduce aviation emissions, airlines are looking into the commercial use of alternative fuels such as biofuel. Because biofuel is not yet commercially viable, the use of commercial biofuel currently appears only sporadically, such as the use of biojet fuel for selected flights to the United Nations Conference on Sustainable Development, Rio+20, in Sao Paolo as supplied by SkyNRG, a global market maker in sustainable jet fuel.⁷³ Commercial flights on bio fuel, such as a 25 week pilot program by KLM from New York to Amsterdam on a biofuel blend, have also been performed, but this is not yet the norm.⁷⁴ By 2020, IATA believes to achieve a 3 to 6% share of sustainable second generation biojet fuel.⁷⁵

⁷¹ International Air Transport Association, "Environment: One Track Mind," online: (2012) <http://www.iata.org/publications/airlines-international/june-2012/Pages/environment.aspx>.

⁷² Ibid.

⁷³ Air Transport Action Group, "SkyNRG supplies 3 unique biofuel flights to Rio +20," online: (2012) <http://newswire.enviro.aero/newswire/2012/jun/19/skynrg-supplies-3-unique-biofuel-flights-to-rio-20>.

⁷⁴ Biomass Magazine, "KLM kicks off biofuel-fueled flight pilot program," online: (2013) <http://biomassmagazine.com/articles/8720/klm-kicks-off-biofuel-fueled-flight-pilot-program>.

⁷⁵ International Air Transport Association, "Fact Sheet: Alternative Fuels," online: (2012) http://www.iata.org/pressroom/facts_figures/fact_sheets/pages/alt-fuels.aspx.

2. The legal impact

Upon the inclusion of aviation into the EU ETS, all flights departing from or arriving at an EU airport would be covered by the scheme. This inclusion requires all aircraft operators to monitor their yearly emissions, have their annual emissions data independently accredited and verified, submit this report to their administering Member State and surrender the equivalent number of allowances for their annual emissions. A monitoring plan has to be submitted in advance of the monitoring period, outlining the process, responsibilities and data flows for collating data.⁷⁶ Aircraft operators need also apply for free allowances, calculated by their 2010 passenger and freight activity.

Though all aircraft operators are legally required to perform the same basic monitoring and reporting, some carriers are in a different legal position.

a. De minimis rule airlines

The EU ETS has excluded three types of ‘small emitters’ from the scope of the scheme by the *de minimis* rule. (1) Flights performed by aircraft with a certified maximum take-off mass of less than 5.700 kg, (2) a commercial operator with fewer than 243 flights per period for three consecutive four-month periods, or (3) flights with total annual emissions lower than 10.000 tonnes per year, are not considered ‘aviation activities’ as per Annex I of Directive 2008. These small emitters can use simplified procedures developed by Eurocontrol to monitor their CO₂ emissions.

⁷⁶ UBM Aviation, "EU Emissions Trading Scheme report," (2012).

b. New entrants

Aircraft operators are considered ‘new entrants’ if they start to perform aviation activities as laid down in Annex I of Directive 2008 (flights departing from or arriving to an EU airport) after 2010. However, due to a lack of historical emission data, free allowance allocation to new entrants is different from existing aircraft operators in the EU market. In order to avoid competitive distortion, 3% of the total quantity of allowances is set aside in a special reserve to ensure market access to new entrants.⁷⁷ An eligible new entrant can apply for these free allowances by making an application to the competent authority of its administering Member State.

c. Fast growing aircraft operators

The same special reserve as for the new entrants is also available for aircraft operators that increased their operations by in excess of 18% of their tonne-kilometer data from 2010 to 2014.⁷⁸

d. EU airlines

The EU ETS has been in force for intra-EU flights since 2011. The EU’s decision to “stop the clock”⁷⁹ applies only to extra-EU flights. The scheme is therefore still in force for intra-EU flights, whether they are operated by EU or non-EU carriers⁸⁰, as emissions from domestic aviation are included in the individual targets for national emissions as per the

⁷⁷ See EC Directive 2008, *supra* note 48 at preamble, number 20 and art. 3f.

⁷⁸ Ibid at art. 3f sub b and Lloyd’s Register Quality Assurance Limited, "FAQ's about EU ETS Aviation," online: <http://www.lrq.com/business-challenges/climate-change/standards-and-schemes/eu-ets-aviation-faq.aspx>.

⁷⁹ See Chapter 4 – Global opposition against the EU ETS of this thesis.

⁸⁰ Clyde & Co LLP, "Aviation legal update," online: (2012) http://www.clydeco.com/uploads/Files/CC002382_Aviation_Legal_Update_7_12_12.pdf.

Kyoto Protocol. This implies that EU airlines will be at a competitive disadvantage to their non-EU competitors, as they already have to bear the financial costs of their emissions where their non-EU competitors do not.⁸¹ Additionally, costs increases due to the EU ETS affect non-EU airlines only on selected routes, whereas the EU carriers will see the scheme imposed on almost their entire network. Therefore, EU carriers may see a decrease in demand of 3%. However, this needs to be seen against the backdrop of a 5% increase per annum, resulting in a net growth.⁸²

e. US airlines

All international flights to and from the EU by US airlines are deferred from inclusion into the EU ETS by the EU's decision to "stop the clock". Meanwhile, the US has enacted US Bill S.1956, which authorizes the Secretary of Transportation to prohibit any US airlines from participating in the EU ETS⁸³, to reassess these prohibitions in case of an amendment of the EU ETS and to hold US aircraft operators harmless in case they incur costs in their participation of the EU ETS.⁸⁴

The deferral of the EU ETS should have no influence on the US Bill S.1956 as there have been no amendments as to the contents of the EU Directive 2008. It therefore seems unlikely that the US Secretary of Transportation would reassess the Bill. However, with or without reassessment, it remains to be seen if the Secretary will reimburse the US air carriers for the costs already incurred with their compliance to the EU ETS before this deferral.

⁸¹ See HEC Paris, *supra* note 1 at 12.

⁸² Sascha Albers, Jan-André Böhne, and Heiko Peters, "Will the EU-ETS instigate airline network reconfigurations?," *Journal of Air Transport Management* 15, no. 1 (2009) at 3.

⁸³ See Chapter 4.3 - US Bill S.1956 of this thesis.

⁸⁴ United States Congress, "S. 1956, European Union Emissions Trading Scheme Prohibition Act of 2011," (2011) at art. 2 and 3. [US Bill S. 1956]

Depending on the outcome of ICAO's 38th Assembly, the EU ETS may or may not re-include aviation into the EU ETS. In case the EU does re-include aviation into the EU ETS, and the US Secretary of Transportation has not reassessed the Bill or lifted the prohibition, US airlines will breach either US law, or EU law. Until after this Assembly meeting, the future for US airlines shall be uncertain.

f. Developing country airlines

The legal effect of the EU ETS on developing country airlines is being diminished by the European Council's argument that, from the 98 ICAO States that have no commercial carriers covered by the EU ETS, "75 States have no commercial operator with flights to the EU; and 23 States have commercial aircraft operators which fall under the *de minimis* provisions in the EU ETS and are thus exempt from EU ETS".⁸⁵ Nonetheless, 18 'low-capability' countries have carriers included in the EU ETS⁸⁶ and are therefore affected by it.

g. Other airlines

Chinese aircraft operators are in a comparable situation as the US, as China has also banned its airlines from participating in the EU ETS without prior governmental approval.⁸⁷ The Indian government, in turn, has asked its airlines to refrain from submitting carbon emissions data to the EU.⁸⁸

⁸⁵ European Commission, "Emissions Trade, Trade and 'Trade Wars': the example of Market Based Measures to reduce aviation emissions," (2012) at 8.

⁸⁶ See Scott and Rajamani, *supra* note 3 at 484.

⁸⁷ FlightGlobal, "China bans airlines from complying with EU ETS," online: (2012) <http://www.flightglobal.com/news/articles/china-bans-airlines-from-complying-with-eu-ets-367796/>.

⁸⁸ UPI Asia, "India protests EU airline emissions tax," online: (2012) http://www.upi.com/Business_News/Energy-Resources/2012/01/11/India-protests-EU-airline-emissions-tax/UPI-25031326279600/.

In the exact opposite position are airlines, such as Australian airline Qantas, covered by multiple overlapping carbon emissions scheme, faced with further cost, complexity and possible market distortion.⁸⁹

h. States

For all that the European Commission argues that the EU ETS is only applicable to businesses within the EU⁹⁰, the EU ETS also includes provisions relevant for States, since, in the event a State has adopted a climate change mitigation measure ‘equivalent to’ that of the EU ETS, flights departing from that State could be exempted from the scheme.⁹¹ This would also result in an economic impact, especially on the developing states.

3. The economic impact on airlines

Fuel represents one of the highest fixed costs of an airline’s operation. It is accordingly in the airline’s best interest to use the most fuel efficient aircraft and flight paths possible, combined with the use of alternative fuel sources if available and commercially viable. Airlines have therefore, indirectly, always invested great resources into carbon emissions reduction through, among other things, fleet renewal, improved operational practices and more efficient air traffic management. Along these same lines, IATA⁹² laid down a landmark decision in 2009 named “A Vision for the Future” addressing climate

⁸⁹ FlightGlobal, "Political storm continues to rage over EU ETS," online: (2012) <http://www.flightglobal.com/news/articles/in-focus-political-storm-continues-to-rage-over-eu-ets-368551/>

⁹⁰ Artur Runge-Metzger, "Aviation and Emissions Trading: ICAO Council briefing (29 Sept. 2011)," online: (2011) http://ec.europa.eu/clima/policies/transport/aviation/docs/presentation_icao_en.pdf.

⁹¹ See EC Directive 2008, *supra* note 48 at preamble, number 17.

⁹² IATA stands for the International Air Transport Association.

change and aiming to achieve carbon neutral growth from 2020 and to halve carbon emissions by 2050 (compared to 2005 levels) by means of a four pillar strategy.⁹³

The airline business is subject to thin profit margins, high fixed costs, large capital expenditures and tough competition.⁹⁴ As a result, the additional weight of the EU ETS, on top of other ‘green taxes’ such as the UK APD and the German “ecological air travel levy”, is anticipated to impact the industry in more ways than one.

In the assessment of the economic impact of the inclusion of aviation in the EU ETS, there has been no single answer or forecast. The anticipated impact for airlines ranges from catastrophic to insignificant, harmless, or even profitable. Billions of dollars may be lost, or millions may be gained. Essentially, it is unclear what the EU ETS will bring to the airline industry. Because of the range of method and the difference in assumption parameters used in the economic impact assessments, I shall summarize the most frequent forecasts and conclusions.

a. Increase in air fares and decrease in demand

Apart from the increase in legal requirements necessary for compliance with the EU ETS, the scheme will bring with it a category of new costs for airlines relating to the extra administration, monitoring, reporting and verification of carbon emissions, and allocation of allowances required to be in compliance with the scheme, increasing its overall cost of doing business. From an emissions reduction point of view, an increase in air fares could theoretically dampen passenger demand, which could reduce the amount of emissions if

⁹³ International Air Transport Association, "A global approach to reducing aviation emissions," online: (2009) http://www.iata.org/SiteCollectionDocuments/Documents/Global_Approach_Reducing_Emissions_251109web.pdf.

⁹⁴ Paul Stephen Dempsey and Laurence E. Gesell, *Airline management: Strategies for the 21st Century* (Coast Aire Publications, 2006).

demand has reduced in large enough amounts to reduce the number of flights.⁹⁵ However, the impact of the EU ETS related increase of ticket prices on passenger demand is considered limited in comparison with the effect of the early 2008 fuel spike during which most airlines managed to raise additional fuel taxes on ticket prices without any significant change on demand at the time.⁹⁶

It is widely assumed that, based on previous experience regarding the industry's reaction to fuel price spikes, the airlines will pass on the extra costs of the EU ETS in varying degrees to their passengers, causing an increase in air fares. However, there is no consensus over the pass-through rate that the airlines will be adhering to, as this can differ for each individual airline on each route, based on price elasticity of demand, competition⁹⁷, the operators' business model, his exposure to competition and his position in the market⁹⁸.

Unless a certain percentage of costs are passed through, an airline's pass-through behavior can also be categorized in three scenarios: "Full", "Expense" and "Absorb".⁹⁹ The Full (100%) cost pass-through of EU ETS costs entails that both the actual expenses of the acquisition of carbon emission allowances and the opportunity costs of the free allowances are passed through to the passengers. In the event of an Expense cost pass-through, the airline only passes on the expenses from purchasing allowances, but not the opportunity costs for the free allowances. The Absorb (0%) scenario indicates that the airline absorbs all costs of allowances and does not pass on any costs to its passengers.

⁹⁵ See Anger and Kohler, *supra* note 5 at 41-42.

⁹⁶ See HEC Paris, *supra* note 1 at 11.

⁹⁷ International Centre for Trade and Sustainable Development, "The Inclusion of Aviation in the EU Emissions Trading System: An Economic and Environmental Assessment," online: (2011) <http://ictsd.org/downloads/2011/11/the-inclusion-of-aviation-in-the-eu-emissions-trading-system.pdf>.

⁹⁸ International Emissions Trading Association, "EU ETS & Aviation," online: (2012) http://www.ieta.org/assets/3-Minute-Briefings/3-minutes-briefing_eu-ets-aviation_final-01192012.pdf.

⁹⁹ Robert Malina et al., "The impact of the European Union Emissions Trading Scheme on US aviation," *Journal of Air Transport Management* 19, no. 0 (2012).

The ability of an airline to pass-through the EU ETS costs can mean the difference between the EU ETS costing the industry €1.125 billion¹⁰⁰ in 2012-2013¹⁰¹ (in an Absorb situation), or airlines profiting €20 billion (in a Full situation)¹⁰² in the period 2012 to 2020. The pass-through rate therefore marks the difference between the EU ETS being economically profitable for airlines, ‘revenue neutral’ or suffering losses.

Cost of carbon to airlines at different pass-through rates, 2012-20 (€bn)¹⁰³

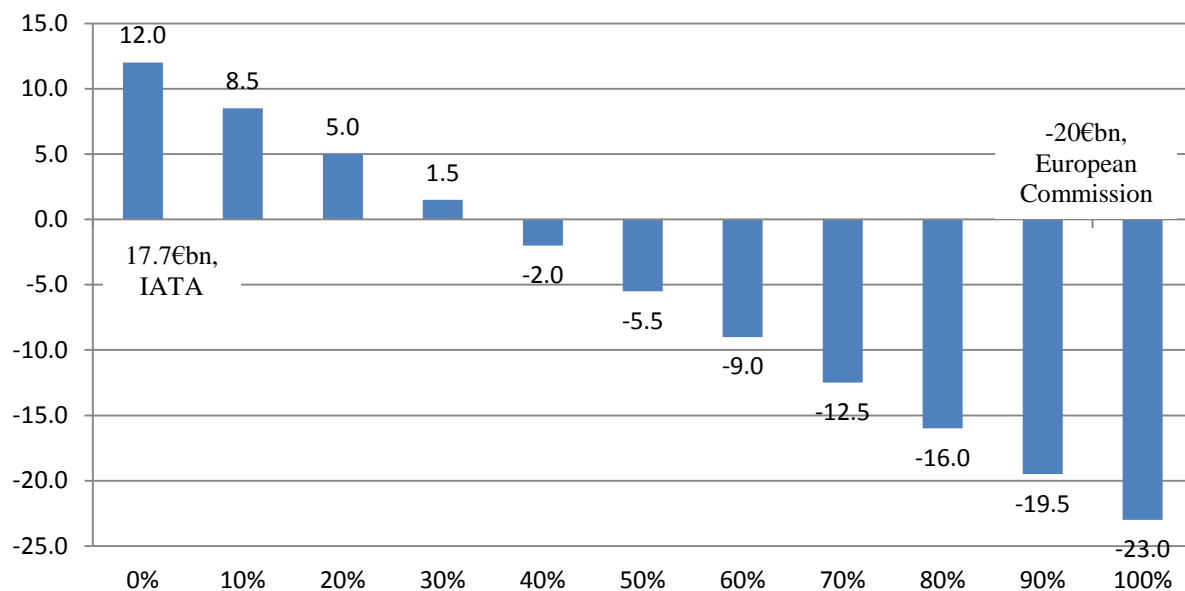


Figure 1

Based on Figure 1 (above), Bloomberg concludes that the airlines would have to pass on 30-40% of the EU ETS costs to their passengers in order for the scheme to be ‘revenue neutral’ in the period of 2013 to 2020. Additionally, it states that the two factors preventing a

¹⁰⁰ Standard and Poor's, "Airline carbon costs take off as EU emissions regulations reach for the skies," online: (2011) <http://www.environmental-finance.com/download.php?files/pdf/4d663c478efb8/Airline%20Carbon%20Costs%20take%20Off.pdf>.

¹⁰¹ This report was published before the EU's decision to defer the EU ETS.

¹⁰² European Commission, "European Commission sets the rules for allocation of free emissions allowances to airlines," online: (2011) http://ec.europa.eu/clima/news/articles/news_2011092601_en.htm.

¹⁰³ Bloomberg New Energy Finance, "Including aviation in the EU ETS - the burning question," (2011) at 7. Assumes current market prices for CO₂.

Full cost pass-through to passengers are (i) the competition on certain international routes from non-EU ETS regulated carriers, and (ii) decrease in demand from higher prices.¹⁰⁴ The ICTSD remarks that price elasticity of demand, dependent on factors such as location and alternative modes of transportation, shall define on which routes the airlines can pass through their costs without decreasing demand.¹⁰⁵ A study done by the MIT notes that market distortion due to imperfect competition, sunk and adjustment costs could be reasons why airlines will not choose to fully pass-through all costs.¹⁰⁶ However, according to Albers *et al.*¹⁰⁷, the EU ETS does not seem to threaten the highly competitive nature of the aviation industry as much as feared as the magnitude of the additional costs induced by the scheme should be seen in relation to other cost factors and their changes in recent times, such as the world oil price increases in recent years¹⁰⁸.

In conclusion, most impact assessment reports agree that the inclusion of aviation into the EU ETS is not anticipated to have a significant impact on tickets prices and consequently on passenger demand, goods demand¹⁰⁹, aggregate traffic¹¹⁰ or, indirectly, CO₂ emissions¹¹¹, as compared to such other costs as fuel surcharges and air passenger duties.

The increase on tickets for short-haul, medium-haul, long-haul, inter-EU and transatlantic flights depends greatly on the pass-through rate of the airline. However, predictions have been made as to what the potential increase would look like. Unfortunately, not many reports can be accurately compared to one another as they do not use the same

¹⁰⁴ Ibid.

¹⁰⁵ See International Centre for Trade and Sustainable Development, *supra* note 97 at 13.

¹⁰⁶ See Malina et al., *supra* note 99 at 38.

¹⁰⁷ See Albers, Böhne, and Peters, *supra* note 82.

¹⁰⁸ Elena Ares, "EU ETS and Aviation," ed. House of Commons (House of Commons Library 2012) at 3.

¹⁰⁹ See International Emissions Trading Association, *supra* note 98 at 3.

¹¹⁰ See Malina et al., *supra* note 99.

¹¹¹ See Ares, *supra* note 108 at 6.

assumption parameters in their calculations. The following table should therefore be interpreted as a snapshot of the range of impacts the EU ETS may have on ticket prices, and not as an accurate assessment comparison.

€	Short-haul	Medium-haul	Long-haul	Inter-EU	Transatlantic
Ares ¹¹²				1.80 – 9.00	2.00 – 12.00
IATA ¹¹³				3.48 – 7.47	18.77 – 40.12
Ernst & Young ¹¹⁴	0.1 – 1.36	0.14 – 2.10	1.04 – 10.32		
SEC ¹¹⁵	0.9 – 4.60	1.80 – 9.00	7.90 – 39.60		
IETA ¹¹⁶	1.0 – 6.60	1.80 – 9.00	8.00 – 40.00		
Boon ¹¹⁷	1.1 – 6.90	2.10 – 13.5	9.40 – 59.40		
Range	0.1 – 6.9	0.14 – 13.5	1.04 – 59.40	1.80 – 9.00	2.00 – 40.12

Table 1

This sheer range of ticket price increases demonstrates the uncertainty airlines are looking at in relation to the impact of the EU ETS.

b. Short-term effect: Windfall gains from free allowances

In the midst of all the losses, two recent studies report a silver lining to the inclusion of aviation into the EU ETS: windfall gains associated with the opportunity costs from free allowances.

A 2011 study by the MIT¹¹⁸ on the impact of the EU ETS on US aviation shows that, in a Full pass-through scenario, US airlines could profit \$2.6 billion between 2012 and 2020.

¹¹² Ibid at 3.

¹¹³ International Air Transport Association, "Financial impact of extending the EU ETS to airlines," (2007).

¹¹⁴ Ernst & Young, "Analysis of the EC proposal to include aviation activities in the emissions trading scheme" (2007).

¹¹⁵ European Commission, "Commission staff working document - Impact Assessment of the inclusion of aviation activities in the scheme for greenhouse gas emission allowance trading within the Community," (2006). [EC Impact Assessment 2006]

¹¹⁶ See International Emissions Trading Association, *supra* note 98.

¹¹⁷ Bart Boon et al., "Allocation of allowances for aviation in the EU ETS," (2007).

¹¹⁸ See Malina et al., *supra* note 99.

The study reasons that the EU ETS will bring with it an increase in ticket prices. This increase will cause demand to decrease in comparison with Business as Usual, but traffic will continue to grow by 31.8% in a Full scenario between 2012 and 2020 as compared to 34.5% in a Business as Usual scenario. The cut in demand will also decrease emissions, resulting in lowered costs from allowance acquisition. Operating revenues, a product of traffic and air fares, shall increase as the increases in ticket prices will ‘more than offset’ the reduced traffic because of demand inelasticity. Adding up decreased costs and increased traffic makes for an increase in revenue per RTK¹¹⁹.

In December 2012, the CE Delft¹²⁰ published an even rosier scenario after the EU’s decision to “stop the clock”. Besides the windfall profit made from passing on the opportunity costs of the free allowances to passengers (‘ETS Windfall’), airlines would experience an additional windfall profit after having raised their prices or added surcharges in anticipation of the application of the EU ETS. Because of the decrease in costs related to purchasing allowances for the EU ETS because of the ‘Clock Stopping’ initiative, another Windfall profit is made (‘Stopping the Clock Windfall’). The Windfall profits are calculated for all non-intra EU flights to and from an EU airport by all airlines in 2012, with the lower value corresponding to a 50% pass-through scenario, and the upper value to a Full cost pass-through scenario. According to the study, the ETS Windfall profit alone would amount to €436-€872 million. Add to that the additional €243-€486 million profit from the Stopping the Clock Windfall to create a total of €679-€1.358 million in estimated Windfall profits in 2012.

¹¹⁹ RTK stands for Revenue Tonne Kilometers.

¹²⁰ D. Nelissen and J. Faber, "Costs and benefits of stopping the clock. How airlines profit from changes in the EU ETS.," (2012), http://www.transportenvironment.org/sites/te/files/publications/CE_Delft_7931_Costs_and_Benefits_Stopping_Clock_Final.pdf.

The largest share of this profit is expected to go to the EU airlines (55%) due to their market share, followed by the US airlines (13%).

c. Carbon leakage through the use of non-EU stops

In order to prevent EU ETS charges, air carriers could choose to avoid the EU as hubs or stop-overs by reconfiguration their routes, relocating their hubs or choosing to add artificial stopovers at airports near the rim of the EU airspace. However, these scenarios are considered unrealistic for a couple of reasons.

First of all, the increase of ticket prices is not significant enough to warrant the great expenses, considerable effort and regulatory issues required to establish a new hub outside of the EU airspace. Hubs are a location-specific and costly investment upon which the hub-and-spoke system and city-pair routes of an airline are based.¹²¹ Relocating a hub would mean restructuring the entire route map of an airline and potentially with it, its business model.

Secondly, flight deviation by including an artificial stop-over outside of the EU airspace may cost more than it gains. There are only a few major airports just outside of the EU airspace, such as Istanbul or Abu Dhabi.¹²² Adding an artificial stop-over to a flight will create additional airport burdens for the flight, and prolong travel times. As a result, the additional stop-over will cause that particular flight to lose its appeal. Therefore, unless a stop-over were to generate additional revenue by local point-to-point travel, this strategy is unlikely to be pursued.¹²³

Instead, it could be easier for non-EU carriers to use their newest and cleanest aircraft when flying routes in and out of the EU in order to minimize their carbon emissions on

¹²¹ See Albers, Böhne, and Peters, *supra* note 82 at 4.

¹²² See International Emissions Trading Association, *supra* note 98 at 3.

¹²³ See Albers, Böhne, and Peters, *supra* note 82 at 4.

routes covered by the EU ETS. This would partially defeat the purpose of the EU ETS as the older, less fuel-effective aircraft will just be used on non-EU routes and therefore, the rate of carbon emitted would remain the same.¹²⁴

d. Air carriers drop routes

In the worst case scenario, an air carrier could drop a route that no longer remains profitable because of the impact of ticket prices on passenger demand. In that case, this increase in costs and decrease in demand may cause economic and social consequences to regional connectivity and local employment.¹²⁵

¹²⁴ See International Emissions Trading Association, *supra* note 98 at 3.

¹²⁵ See UBM Aviation, *supra* note 76 at 6.

Chapter 4 – Global opposition against the EU ETS

The EU's announcement regarding the inclusion of aviation into the EU ETS provoked an international uproar. This outcry fanned out into a multitude of proclamations from every branch of, as well as related to, the aviation industry, ranging from mild concern to threats of boycotting and retaliation and from court cases to prohibitions of participation in the scheme.

Both economic and political concerns were expressed regarding the risk of the ETS leading to a trade war with China as the Chinese government delayed the final signing on a deal for 10 A380 planes¹²⁶¹²⁷ and banned its airlines from participating in the emissions trading scheme without prior governmental approval.¹²⁸ The China Air Transport Association also had ongoing discussions on whether to file a suit against the EU ETS.¹²⁹ The likelihood of a trade war occurring increased when India formally joined China in boycotting the scheme despite being in the final stages of negotiations of a Free Trade Agreement with the EU.¹³⁰

Arabian Gulf carriers such as Emirates Airline and Etihad Airways¹³¹ felt nothing short of penalized by the additional costs that would have to be made in order to comply with

¹²⁶ Reuters, "Airbus worried about fallout of E.U. plan to charge for airline emissions," online: (2012) <http://www.nytimes.com/2012/02/14/business/global/airbus-worried-about-fallout-of-eu-plan-to-charge-for-airline-emissions.html>.

¹²⁷ Air Transport World, "China ambassador calls it 'reasonable' to avoid Airbus aircraft orders to protest EU ETS," online: (2012) <http://atwonline.com/international-aviation-regulation/news/china-ambassador-calls-it-reasonable-avoid-airbus-aircraft-or>.

¹²⁸ See FlightGlobal, *supra* note 87.

¹²⁹ FlightGlobal, "Chinese airlines to fight EU ETS," online: (2011) <http://www.flightglobal.com/news/articles/chinese-airlines-to-fight-eu-ets-364614/>.

¹³⁰ Reuters, "India joins China in boycott of EU carbon scheme," online: (2012) <http://www.reuters.com/article/2012/03/22/india-eu-emissions-idUSL3E8EM4P920120322>

¹³¹ Etihad Airlines, "Etihad Airways to increase surcharges to take account of EU Carbon Scheme," online: (2012) <http://www.etihadairways.com/sites/Etihad/global/en/aboutetihad/mediacenter/newslisting/newsdetails/Pages/etihad-to-increase-surcharge-regarding-eu-carbon-scheme-feb12.aspx>.

the ETS as they had already invested millions in their young fleets for maximum fuel efficiency.¹³² However, Emirates has since complied with the EU ETS despite reservations over the scheme.¹³³

Europe's own aviation sector has also dreaded the inclusion of aviation into the scheme. Airbus, British Airways, Virgin Galactic, Lufthansa, Air France, Air Berlin and Iberia led an opposition campaign in order to find a compromise solution in order to have "these punitive trade measures stopped before it is too late"¹³⁴, as the ETS was argued to threaten 2,000 jobs.¹³⁵ A Dutch report¹³⁶ by the Kennisinstituut voor Mobiliteitsbeleid¹³⁷ on the effects of the new carbon tax on the environment and the Dutch aviation industry concluded that the ETS would bring with it a distortion of competition, higher ticket prices and the possible loss of jobs with it for Amsterdam Schiphol and KLM.¹³⁸

Lufthansa Cargo has claimed to have become victim to retaliatory actions of states, as the Russian opposition had delayed the approval of traffic rights in retaliation to the ETS.¹³⁹ Likewise, the Association of European Airlines and Airbus noted that the US could

¹³² Air Transport News, "EU carbon tax 'penalizing' Gulf airlines despite having a young and fuel-efficient fleet," online: (2012) <http://www.airtransportnews.aero/article.pl?id=35151>.

¹³³ Emirates Airlines, "Despite reservations over the scheme, Emirates has complied with the ETS," online: (2012) http://www.emirates.com/english/environment/our_position/eu_emissions_trading_scheme.aspx.

¹³⁴ Reuters, "Aviation chiefs ask EU leaders to halt carbon row," online: (2012) <http://uk.reuters.com/article/2012/03/12/uk-aviation-tax-eu-idUKBRE82B00M20120312>.

¹³⁵ Reuters, "Aviation calls on EU leaders to fix carbon tax-FT," online: (2012) <http://www.reuters.com/article/2012/03/12/aviation-tax-eu-idUSL5E8EC00420120312>.

¹³⁶ Kennisinstituut voor Mobiliteitsbeleid, "Civil aviation in the EU emissions trading scheme," (2012).

¹³⁷ The KiM is an independent institute within the Ministry of Infrastructure and the Environment and carries out transport policy studies and analyses.

¹³⁸ Air Transport World, "Dutch politician: EU ETS will hurt KLM and AMS airport," online: (2012) <http://atwonline.com/international-aviation-regulation/news/dutch-politician-eu-ets-will-hurt-klm-ams-airport-0306>.

¹³⁹ Air Transport World, "Russian opposition to ETS delays Lufthansa Cargo's traffic rights approval," online: (2012) <http://atwonline.com/international-aviation-regulation/news/russian-opposition-ets-delays-lufthansa-cargo-s-traffic-right>.

perform retaliatory measures that would most likely target European carriers and Airbus.¹⁴⁰ The US has even warned of possible retaliatory measures, without expressly disclosing them.¹⁴¹ Further concerns surfaced when a group of non-European countries gathered in Moscow to coordinate their opposition to the ETS, which included a list of suggested retaliatory measures.¹⁴² In response to the non-compliance and retaliation threats, the European Commission had pointed out that the ETS directive allows “the imposition [of] an operating ban on any airline which consistently breaks EU law”.¹⁴³

Other airlines are caught between a rock and a hard place as they have become subject to overlapping carbon emissions schemes. Qantas Airways, for example, is covered by three separate carbon emissions schemes, namely the EU, Australia and New Zealand, and has consequently had to invest in complex monitoring and compliance aspects of these schemes as opposed to actual emissions reductions.¹⁴⁴

International and regional aviation organizations IATA¹⁴⁵ and ALTA¹⁴⁶ both strongly opposed the inclusion of international aviation into the scheme, calling the scheme “discriminatory, flawed and, ultimately, illegal”¹⁴⁷ and soliciting governments to reject the

¹⁴⁰ Aviation Week, "China threatens Europe on Emissions Trading," online: (2011) http://www.aviationweek.com/aw/generic/story.jsp?id=news/awst/2011/06/13/AW_06_13_2011_p26-333814.xml&channel=comm.

¹⁴¹ Aviation Week, "New rounds likely in emissions trading battle," online: (2012) http://www.aviationweek.com/Article.aspx?id=/article-xml/AW_01_02_2012_p36-409940.xml

¹⁴² Air Transport News, "Retaliation is not the solution to the ETS dispute," online: (2012) <http://www.airtransportnews.aero/article.pl?id=35159>.

¹⁴³ FlightGlobal, "Chinese carriers could be banned from Europe over ETS row," online: (2012) <http://www.flightglobal.com/news/articles/chinese-carriers-could-be-banned-from-europe-over-ets-row-366723/>.

¹⁴⁴ See FlightGlobal, *supra* note 89.

¹⁴⁵ The International Air Transport Association is the trade association for the world's airlines.

¹⁴⁶ The Latin American and Caribbean Air Transport Association is an organization representing over 90% of the Latin American and Caribbean region's commercial air traffic.

¹⁴⁷ Aviation Week, "ALTA joins dissent against EU ETS," online: (2011) <http://www.aviationweek.com/aw/generic/story.jsp?id=news/avd/2011/06/09/10.xml&channel=comm>

scheme¹⁴⁸, noting that the ETS has become a distraction from creating a global emissions trading scheme as countries had become more focused on fighting the ETS than emissions reductions.¹⁴⁹

The Association of Asia Pacific Airlines was deeply concerned about possible retaliatory measures and urged governments to work together within the auspices of ICAO whilst refraining from introducing duplicative carbon emissions measures.¹⁵⁰ However, it is to be seen whether the overhanging presence of the EU ETS shall positively contribute to the speedy development of a global scheme under the ICAO auspices, or if the political pressure has “poisoned the atmosphere for compromise”¹⁵¹.

The international community not only opposed the inclusion of aviation into the EU ETS through threats of retaliation and other political statements, but legal action has since been taken against the EU ETS, or the participation of airlines in the scheme.

An objection against the EU ETS was expressed when US airlines challenged the EU Directive in a court case against the United Kingdom upon its national implementation of the Directive’s measures. The airlines argued that the Directive was incompatible with international law, seeking annulment of the measures implementing this Directive in the United Kingdom.

Meanwhile, the Indian Government and 25 other States have expressed their objections to the EU ETS to the ICAO Council in the shape of the Delhi Declaration. This

¹⁴⁸ See Aviation Week, *supra* note 140.

¹⁴⁹ Air Transport News, "IATA disappointed with EU Court decision on ETS," online: (2011) <http://www.airtransportnews.aero/article.pl?id=33982>.

¹⁵⁰ Air Transport News, "AAPA Calls for Renewed Political Dialogue on EU ETS," online: (2011) <http://www.airtransportnews.aero/article.pl?id=34054>.

¹⁵¹ See Aviation Week, *supra* note 141.

Declaration requested the international community through the ICAO Council to oppose the EU ETS as it would “curb the sustainable growth of international aviation”.¹⁵²

In the meantime, the US has signed into law a Bill prohibiting US airlines from participating in the EU ETS.¹⁵³ Additionally, the US noted that it was “ready to move with filing an article 84¹⁵⁴ complaint” before the ICAO Council.¹⁵⁵ This complaint procedure is rarely used, the last time being 20 years ago in another environmental dispute between the US and the EU regarding noise emissions from hush-kitted airplanes.¹⁵⁶

Consequently, as a way of encouraging the ICAO member states to work together towards a global market-based scheme before or during ICAO’s 38th General Assembly, and most likely compelled by the increased pressure from countries and airlines alike, the EU has deferred the inclusion of aviation into the EU ETS until after this ICAO Assembly, the so-called “stop the clock”.

¹⁵² International Civil Aviation Organization, "Working Paper C-WP/13790, "Inclusion of international civil aviation in the European Union emissions trading scheme (EU ETS) and its impact", " ed. ICAO Council (2011) at 3.

¹⁵³ See US Bill S. 1956, *supra* note 84.

¹⁵⁴ Article 84 of the Chicago Convention states “If any disagreement between two or more contracting States relating to the interpretation or application of this Convention and its Annexes cannot be settled by negotiation, it shall, on the application of any State concerned in the disagreement, be decided by the Council. No member of the Council shall vote in the consideration by the Council of any dispute to which it is a party. Any contracting State may, subject to Article 85, appeal from the decision of the Council to an ad hoc arbitral tribunal agreed upon with the other parties to the dispute or to the Permanent Court of International Justice. [...]”

¹⁵⁵ Green Air Online, "Countries opposing EU ETS to convene second meeting within weeks to discuss retaliatory action against Europe," online: (2012) <http://www.greenaironline.com/news.php?viewStory=1417>

¹⁵⁶ The Hushkit case refers to the EU Regulation no. 925/1999 of 29 April 1999. The EU wanted to reduce noise pollution in its territory by adopting this Regulation, which essentially banned aircraft equipped with hushkits from being used within the EU territory. However, aircraft equipped with hushkits were certified as a Chapter 3 aircraft by ICAO, which complied with the minimum standards set out in Annex 16 of the ICAO's Standards and Recommended Practices. Even though the EU has exclusive sovereignty over which aircraft it allows to be used within its airspace, it must recognize the certificates of airworthiness and certificates of competency issued or rendered valid by a contracting State, if these certificates are equal to or above the minimum standards established by the Chicago Convention (see art. 33). The minimum standards in this case were the SARPs with regard to noise emissions as laid down in Annex 16. The hushkitted-aircraft were in compliance with the minimum standards. Therefore, the EU ban was in violation of art. 33 of the Chicago Convention.

1. Case C-366/10, ATAA v UK

As part of the national measures implementing Directive 2008, the United Kingdom adopted the Aviation Greenhouse Gas Emissions Trading Scheme Regulations 2009 on September 17, 2009.¹⁵⁷ On December 16, 2009, Air Transport Association of America, American Airlines, Continental Airlines and United Air Lines (“the claimants”) brought an action against the Secretary of State for Energy and Climate Change of the United Kingdom before the High Court of Justice of England and Wales, challenging the validity of the measures taken by the United Kingdom to implement Directive 2008 as transposed to Regulation 2009 in the UK. The High Court sent this issue to the Court of Justice of the European Union for a preliminary ruling on the validity of this Directive, after which several governments submitted their observations to the Court of Justice.¹⁵⁸ Advocate General Kokott issued an opinion on October 6, 2011, and the final judgment of the Court followed on December 21, 2011.

The claimants sought annulment of the measurements implementing Directive 2008/101 in the United Kingdom, and argued that the inclusion of international aviation, and in particular transatlantic flights, into the EU ETS by Directive 2008 was in breach of a number of principles of customary international law and of several international agreements. In summary, the claimants stated that (1) the EU ETS had extraterritorial application, (2) an emissions trading scheme including international aviation should be negotiated and adopted through ICAO and not through the EU, and (3) the EU ETS was a tax or charge, and

¹⁵⁷ United Kingdom, “The Aviation Greenhouse Gas Emissions Trading Scheme Regulations 2009,” in 2009 *no.* 2301 (United Kingdom: Legislation.gov.uk, 2009).

¹⁵⁸ See ATAA v U.K. (CJEU Judgment), *supra* note 31.

therefore prohibited by international agreements.

In order to determine whether Directive 2008 was to be declared invalid, the High Court sent the following 4 questions to the Court of Justice of the European Union in a preliminary ruling procedure.¹⁵⁹

(1) Are any or all of the following rules of international law capable of being relied upon in this case to challenge the validity of Directive 2003/87/EC as amended by Directive 2008/101/EC so as to include aviation activities within the EU Emissions Trading Scheme (together the “Amended Directive”):

- (a) the principle of customary international law that each State has complete and exclusive sovereignty over its airspace;
- (b) the principle of customary international law that no State may validly purport to subject any part of the high seas to its sovereignty;
- (c) the principle of customary international law of freedom to fly over the high seas;
- (d) the principle of customary international law (the existence of which is not accepted by the Defendant) that aircraft overflying the high seas are subject to the exclusive jurisdiction of the country in which they are registered, save as expressly provided for by international treaty;
- (e) the Chicago Convention (in particular Articles 1, 11, 12, 15 and 24);
- (f) the Open Skies Agreement (in particular Articles 7, 11(2)(c) and 15(3));
- (g) the Kyoto Protocol (in particular, Article 2(2))?

To the extent that question 1 may be answered in the affirmative:

(2) Is the Amended Directive invalid, if and in so far as it applies the Emissions Trading Scheme to those parts of flights (either generally or by aircraft registered in third countries) which take place outside the airspace of EU Member States, as contravening one or more of the principles of customary international law asserted above?

(3) Is the Amended Directive invalid, if and in so far as it applies the Emissions Trading Scheme to those parts of flights (either generally or by aircraft registered in third countries) which take place outside the airspace of EU Member States:

- (a) as contravening Articles 1, 11 and/or 12 of the Chicago Convention;
- (b) as contravening Article 7 of the Open Skies Agreement?

(4) Is the Amended Directive invalid, in so far as it applies the Emissions Trading Scheme to aviation activities:

- (a) as contravening Article 2(2) of the Kyoto Protocol and Article 15(3) of the Open Skies Agreement;

¹⁵⁹ Ibid at para. 45.

- (b) as contravening Article 15 of the Chicago Convention, on its own or in conjunction with Articles 3(4) and 15(3) of the Open Skies Agreement;
- (c) as contravening Article 24 of the Chicago Convention, on its own or in conjunction with Article 11(2)(c) of the Open Skies Agreement?

Based on article 23 of the Protocol on the Statute of the Court of Justice of European Union¹⁶⁰, the interveners to the claimant¹⁶¹, the interveners to the defendants¹⁶², several EU Member States¹⁶³, the European Parliament, the Council of the European Union and the European Commission had submitted their written observations regarding this case.

In summary, after having considered the written procedures, the hearing of July 5th, 2011, observations of all of the abovementioned and the opinion of the Advocate General, the Court of Justice of the European Union ruled as following:

The Court starts off by identifying the four sources of law against which Directive 2008 can be tested: the Chicago Convention, the Kyoto Protocol, the Air Transport Agreement¹⁶⁴ between the EU and the US and customary international law.¹⁶⁵

In order to determine whether the validity of the Directive may be assessed in the light of the rules of these principles and provisions, they must satisfy certain conditions. First off, the EU must be bound by these rules,¹⁶⁶ secondly, the nature and the broad logic of the

¹⁶⁰ Court of Justice of the European Union, "Protocol on the Statute of the Court of Justice of the European Union," in *C 310/210* (European Union: Official Journal of the European Union, 2004).

¹⁶¹ The International Air Transport Association and the National Airlines Council of Canada.

¹⁶² The Aviation Environment Federation, WWF-UK, the European Federation for Transport and Environment, Environmental Defense Fund and Earthjustice.

¹⁶³ The EU Member States that submitted a written observation included the United Kingdom, Belgium, Denmark, Germany, Spain, France, Italy, the Netherlands, Austria, Poland, Sweden, Iceland and Norway.

¹⁶⁴ "Air Transport Agreement between the European Community and the United States," in *Official Journal of the European Union* (European Community and the United States 2007).

¹⁶⁵ See *ATAA v U.K.* (CJEU Judgment), *supra* note 31 at para. 3, 10, 13 and 101.

¹⁶⁶ *Ibid* at para. 52.

principles and provisions must not prohibit such an examination,¹⁶⁷ and finally, the provisions must be unconditional and sufficiently precise.¹⁶⁸

The Court quickly sets aside the applicability of the Chicago Convention by stating that the EU is not a party to the Convention, even if all of its Member States are.¹⁶⁹ Accordingly, the Court deems article 351 TFEU¹⁷⁰ inapplicable, as it creates a commitment to an EU Member State to remove incompatibilities between a prior State commitment and EU treaties, but does not make such a prior State commitment binding to the EU.¹⁷¹¹⁷² The theory of functional succession has also been abandoned by the Court, as the EU never fully “assumed the powers preciously exercised by its Member States in the field [...] to which that international convention applies”¹⁷³ and the EU does not have “exclusive competence in the entire field of international civil aviation as covered by that convention”¹⁷⁴.

Even though the EU is part of the Kyoto Protocol, it was determined that its provisions cannot be relied upon in this procedure because article 2(2) of the Protocol cannot be considered unconditional and sufficiently precise for individuals to rely upon in legal proceedings.¹⁷⁵

The Open Skies Agreement satisfies the conditions set by the court; the European Union is part of the Agreement,¹⁷⁶ the object of the Agreement is to create an open market in which the airlines of the contracting parties can do business whilst the Agreement confers

¹⁶⁷ Ibid at para. 53.

¹⁶⁸ Ibid at para. 54-55. “Unconditional and sufficiently precise” provisions contain a clear and precise obligation which is not subject to the adoption of any subsequent measure.

¹⁶⁹ Ibid at para. 60.

¹⁷⁰ European Union, “Consolidated version of the Treaty on the Functioning of the European Union,” in *Official Journal of the European Union* (European Union 2008).

¹⁷¹ See *ATAA v U.K.* (CJEU Judgment), *supra* note 31 at para. 61.

¹⁷² See *Havel and Mulligan*, *supra* note 7 at 11.

¹⁷³ See *ATAA v U.K.* (CJEU Judgment), *supra* note 31 at para. 62.

¹⁷⁴ Ibid at para. 69.

¹⁷⁵ Ibid at para. 77-78.

¹⁷⁶ Ibid at para. 79.

rights and imposes obligations upon them,¹⁷⁷ and the provisions¹⁷⁸ of the Agreement are unconditional and sufficiently precise to be relied upon in the context of the case.¹⁷⁹

Next, the Court determines that, in order for a principle of law to call into question the validity of Directive 2008, this principle must first be recognized as forming part of customary international law, and secondly be determined whether and to what extent the principle may be relied upon by individuals.¹⁸⁰

The following four principles have been set out by the referring court:

- (1) Each State has complete and exclusive sovereignty over its airspace.
- (2) No State may validly purport to subject any part of the high seas to its sovereignty.
- (3) Freedom to fly over the high seas.
- (4) Aircraft overflying the high seas are subject to the exclusive jurisdiction of the State in which they are registered to.

The first three principles have been codified in several international treaties and represent “the current state of customary international air and maritime law”, and in doing so, have been recognized by the EU as customary international law.¹⁸¹ It is subsequently determined that they may also be relied upon by individuals and called into question regarding the competence of the EU to adopt Directive 2008. The first three principles pass

¹⁷⁷ Ibid at para. 80-84.

¹⁷⁸ Ibid at para. 86-100, the provisions of the Agreement applicable to this case are art. 7, art. 11(1) and (2), and art. 15(3) in conjunction with art. 2 and art. 3(4).

¹⁷⁹ Ibid at para. 87, 94, 100.

¹⁸⁰ Ibid at para 102.

¹⁸¹ Ibid at para. 103-104.

the criteria of codification and individual reliance.¹⁸² However, the Court deems there to be insufficient evidence assigning the customary international law status to the fourth principle.¹⁸³

In conclusion, the Court has cut down the list of sources of law against which Directive 2008 can be assessed against to three principles of customary international law and article 7, 11(1), 11(2)(c), and article 15(3) of the Open Skies Agreement in conjunction with articles 2 and 3(4) of said Agreement.¹⁸⁴

Following this conclusion, the Court analyzes if, and in so far, the EU ETS is intended to be applicable to those portions of the flight occurring outside of the EU Member States' airspace, including to flights by aircraft registered in non-EU Member States.¹⁸⁵

Upon assessment of the three customary international law principles and article 7¹⁸⁶ of the Open Skies Agreement, the Court declares that the ETS does not regulate extraterritorial activity as it does not apply to aircraft flying through non-EU airspace or over the high seas. Therefore, the sovereignty of a foreign State is never infringed, as the ETS does not give rise to any obligation on aircraft flying through non-EU airspace¹⁸⁷¹⁸⁸ or affect

¹⁸² Ibid at para. 107, 11.

¹⁸³ Ibid at para. 106.

¹⁸⁴ Ibid at para. 111.

¹⁸⁵ Ibid at para. 112-13.

¹⁸⁶ Article 7: Application of laws

1. The laws and regulations of a Party relating to the admission to or departure from its territory of aircraft engaged in international air navigation, or to the operation and navigation of such aircraft while within its territory, shall be applied to the aircraft utilised by the airlines of the other Party, and shall be complied with by such aircraft upon entering or departing from or while within the territory of the first Party.
2. While entering, within, or leaving the territory of one Party, the laws and regulations applicable within that territory relating to the admission to or departure from its territory of passengers, crew or cargo on aircraft (including regulations relating to entry, clearance, immigration, passports, customs and quarantine or, in the case of mail, postal regulations) shall be complied with by, or on behalf of, such passengers, crew or cargo of the other Party's airlines.

¹⁸⁷ See ATAA v U.K. (Opinion), *supra* note 30 at para. 145.

¹⁸⁸ See ATAA v U.K. (CJEU Judgment), *supra* note 31 at para. 125.

the principle of freedom to fly over the high seas.¹⁸⁹ The scheme has a sufficiently strong territorial link and is non-discriminatory as it only applies to (every) air operator who chooses to operate a commercial air route arriving at or departing from an EU aerodrome¹⁹⁰. The scheme merely takes into account the fuel consumption and carbon emission throughout the entire flight, be it over the high seas, foreign territory or EU airspace.

Articles 11(1)¹⁹¹ and 11(2)(c)¹⁹² of the Open Skies Agreement determine that, among other things, fuel must be exempt from taxes, duties, fees and charges. The Court considers the ETS not to be invalid in the light of these articles.¹⁹³

Fuel, or more specifically the amount of fuel consumed during a flight, is used to calculate the number of allowances that should be surrendered for each particular flight landing into or departing from an EU aerodrome.¹⁹⁴ The actual costs of these allowances do not equate a tax, duty, fee or charge¹⁹⁵ as, unlike taxes, duties, fees or charges, the price per allowance is not a rate defined in advance, but a cost defined by the market price through a

¹⁸⁹ Ibid at para. 126.

¹⁹⁰ Ibid at para. 127, 33.

¹⁹¹ Article 11: Customs duties and charges

1. On arriving in the territory of one Party, aircraft operated in international air transportation by the airlines of the other Party, their regular equipment, ground equipment, fuel, lubricants, consumable technical supplies, spare parts (including engines), aircraft stores (including but not limited to such items of food, beverages and liquor, tobacco and other products destined for sale to or use by passengers in limited quantities during flight), and other items intended for or used solely in connection with the operation or servicing of aircraft engaged in international air transportation shall be exempt, on the basis of reciprocity, from all import restrictions, property taxes and capital levies, customs duties, excise taxes, and similar fees and charges that are (a) imposed by the national authorities or the European Community, and (b) not based on the cost of services provided, provided that such equipment and supplies remain on board the aircraft.

¹⁹² Article 11: Customs duties and charges

2. There shall also be exempt, on the basis of reciprocity, from the taxes, levies, duties, fees and charges referred to in paragraph 1 of this Article, with the exception of charges based on the cost of the service provided:

(c) fuel, lubricants and consumable technical supplies introduced into or supplied in the territory of a Party for use in an aircraft of an airline of the other Party engaged in international air transportation, even when these supplies are to be used on a part of the journey performed over the territory of the Party in which they are taken on board

¹⁹³ See *ATAA v U.K.* (CJEU Judgment), *supra* note 31 at para. 147.

¹⁹⁴ Ibid at para. 141.

¹⁹⁵ See *ATAA v U.K.* (Opinion), *supra* note 30 at para. 216.

market-based measure and the surrendered allowances are not intended to generate revenue for the public authorities.

Depending on the manner of acquisition of these allowances, the actual costs of an allowance can differ greatly. On the one hand, airlines shall receive a number of allowances for free as they are allocated based on their emission history. If the airline were to emit within its allocated allowances, the actual costs of its surrendered allowances is zero. If the airline were to emit less than its allocated allowances, it could sell the surplus and make a profit.¹⁹⁶ On the other hand, if the airline's emissions have increased above the allocated amount, it can obtain extra allowances at market price.¹⁹⁷

Further depending on the type of fuel used, there may be no need for the surrender of allowances, as the emissions factor of certain biofuels is zero, and therefore, no allowances are to be surrendered when this fuel is consumed.¹⁹⁸

Contrary as stated by the plaintiffs, the Court does not consider the ETS to infringe article 15(3)¹⁹⁹ of the Open Skies Agreement. Not only is there no evidence provided to indicate that any aviation environmental standard as adopted by ICAO have been infringed, but ICAO's own resolutions²⁰⁰ provides guidelines for the design and implementation of market-based measures, but does not state that these measures would be contrary to the aviation environment standards adopted by ICAO.²⁰¹ Furthermore, the objective of the ETS

¹⁹⁶ See *ATAA v U.K.* (CJEU Judgment), *supra* note 31 at para. 142.

¹⁹⁷ *Ibid.*

¹⁹⁸ See *ATAA v U.K.* (Opinion), *supra* note 30 at para. 233.

¹⁹⁹ Article 15: Environment

3. When environmental measures are established, the aviation environmental standards adopted by the International Civil Aviation Organization in Annexes to the Convention shall be followed except where differences have been filed. The Parties shall apply any environmental measures affecting air services under this Agreement in accordance with Article 2 and 3(4) of this Agreement.

²⁰⁰ See ICAO, *supra* note 37.

²⁰¹ See *ATAA v U.K.* (CJEU Judgment), *supra* note 31 at para. 149.

corresponds with the guidelines as presented in the ICAO Resolution.²⁰² On these grounds, the Court has decided that the EU ETS does not infringe customary international law, or the relevant articles of the EU-US Open Skies Agreement.²⁰³

The Advocate General's opinion and the Court's judgment were both greatly rejoiced and heavily criticized. On the one hand, opposing scholars such as Professor Brian Havel and Mr. John Mulligan from the International Aviation Law Institute in Chicago, USA, noted that "[b]oth the opinion and the judgment rely on a series of questionable, environmentally motivated exceptions to the international law principles upon which the global operation of the international air transport industry has depended for the past seven decades".²⁰⁴ They stress that the issue of carbon emissions emitted outside of the EU airspace should be resolved by diplomatic parleys rather than in the courtroom.²⁰⁵

On the other hand, Dr. Kati Kulovesi from the University of Helsinki, Finland, considers that "the Advocate General makes a plausible legal argument that the EU is in fact not regulating the conduct of foreign aircraft outside the territory of its member states" and "taking into account the entire flight seems necessary for achieving a fair pricing mechanism that recognized the full environmental impact of each flight."²⁰⁶

²⁰² Ibid at para. 150-51.

²⁰³ Ibid at para. 158.

²⁰⁴ See Havel and Mulligan, *supra* note 7 at 5.

²⁰⁵ Ibid at 4.

²⁰⁶ See Kulovesi, *supra* note 4 at 549.

2. The Delhi Declaration

In September 2011, India hosted a two-day meeting at which 26 countries²⁰⁷ gathered to discuss their position regarding the EU ETS for the 194th ICAO Council session.²⁰⁸ During this meeting, a joint declaration named ‘the Delhi Declaration’ was issued, which recognized the need “to address the long-term growth of greenhouse gas emissions”, condemned the EU’s plan to include international flights into the ETS, and called upon States to work through ICAO in developing a global scheme “that will reduce aviation emissions while at the same time avoiding adverse impacts on air transport”.²⁰⁹

The Delhi Declaration was included in working paper C-WP/13790 for the 194th ICAO Council session, presented to the Council by the Secretary General.²¹⁰ During the considerations of the Delhi Declaration, the Representative of the United Kingdom brought forth a procedural defense, stating that the Council had only a “broad competency under art. 54n”²¹¹ but lacked the legal competency to consider and issue clauses 5, 6, 8 and 9 of the Delhi Declaration, as these clauses attest to a “disagreement between two or more contracting States relating to the interpretation or application of this Convention... [that] cannot be settled by negotiation” and should therefore be considered a dispute ex. art. 84 of the Chicago Convention.²¹² The President of the Council agreed that the adoption of the Delhi

²⁰⁷ Argentina, Brazil, Burkina Faso, Cameroon, China, Colombia, Cuba, Egypt, Guatemala, India, Japan, Malaysia, Mexico, Morocco, Nigeria, Paraguay, Peru, the Republic of Korea, the Russian Federation, Saudi Arabia, Singapore, South Africa, Swaziland, Uganda, the United Arab Emirates and the United States.

²⁰⁸ Aviation News, "India, 25 others oppose EU airline carbon charge plan," online: (2011) <http://www.aviationnews.eu/2011/09/30/india-25-others-oppose-eu-airline-carbon-charge-plan/>

²⁰⁹ See ICAO, *supra* note 152 at Appendix.

²¹⁰ The Delhi Declaration was attached as an appendix to subject no. 50 of ICAO Council Working Paper C-WP/13790 on October 17, 2011.

²¹¹ Article 54 of the Chicago Convention: Mandatory functions of Council: The Council shall (n) Consider any matter relating to the Convention which any contracting State refers to it.

²¹² See Chicago Convention, *supra* note 154; also see International Civil Aviation Organization, "Summary minutes of the 2nd meeting of the 194th Council session," ed. Council (2011) at para. 2-5.

Declaration would be no more than a political expression of the Council and not a legally binding statement, upon which the Director of the Legal Affairs and External Relations Bureau elaborated that the article 84 dispute procedure was without prejudice to the exercise of the Council's ordinary powers.²¹³

As one of the only two non-EU States represented in the Council that had not signed the Delhi Declaration,²¹⁴ Australia opposed the EU ETS but proposed actions that could be molded into an accelerated work program by the ICAO Secretariat in order to achieve specific milestones in 2013, so ICAO could have the final text of a global agreement ready before the 38th Session of the Assembly. This proposal would get praised by several other Representatives throughout the Meeting as, among other things, “valuable to the process of reaching a global solution to protecting the environment”.²¹⁵

In summarizing the discussion, the President of the Council noted that the majority of Council Members had agreed that the creation of a global MBM should be done within the auspices of ICAO, and with certain haste. Furthermore, the action plan proposed by Australia was so well received that it merited further looking into. Considering the consensus on various aspects of the Delhi Declaration and a clear support from the majority of Council Members, the President set forth a number of editorial changes in order to adopt the Delhi Declarations as a Council Declaration.

²¹³ Ibid at para. 6-7.

²¹⁴ The other non-EU country that did not sign the Delhi Declaration was Canada.

²¹⁵ See ICAO, *supra* note 212 at para. 70.

3. US Bill S.1956

Both the US government and the US aviation sector have protested the inclusion of international aviation into the EU ETS from the very beginning.²¹⁶ After the US did not receive a “satisfactory response” from the EU upon its objections to this inclusion²¹⁷, the first Bill²¹⁸ prohibiting US airlines from participating in the EU ETS was introduced on July 20th, 2011.²¹⁹ Aviation stakeholders²²⁰ and organizations²²¹ applauded the US for this bold move. Even though this particular Bill was never enacted, a similar Bill with an identical title was unanimously passed and enacted after being signed by the President on November 27, 2012.²²²

The US Bill S.1956 authorizes the Secretary of Transportation to prohibit any US aircraft operator from participating in the EU ETS in case the Secretary considered this prohibition to be in the public interest. The public interest is determined through the impact on (1) US consumers, carriers and operators, (2) the economic, energy, and environmental security of the US and (3) US foreign relations, including existing international commitments.²²³ After any amendment to the EU ETS, the Secretary shall reassess these

²¹⁶ Business Week, "U.S., EU square off on airline pollution," online: (2006) <http://www.businessweek.com/stories/2006-12-05/u-dot-s-dot-eu-square-off-on-airline-pollutionbusinessweek-business-news-stock-market-and-financial-advice>.

²¹⁷ Green Air Online, "US politicians introduce bill to prohibit airlines from joining EU ETS while EU MEPs urge Commission to stand firm," online: (2011) <http://www.greenaironline.com/news.php?viewStory=1389>.

²¹⁸ United States Congress, "H.R. 2594, European Union Emissions Trading Scheme Prohibition Act of 2011," (2011).

²¹⁹ Smart Business Travel, "EU emissions scheme could cost airline industry billions," online: (2011) <http://www.smart-business-travel.ca/eu-emissions-scheme-could-cost-airline-industry-billions/>.

²²⁰ Air Transport World, "US aviation industry groups urge Obama to challenge EU ETS," online: (2012) <http://atwonline.com/eco-aviation/news/us-aviation-industry-groups-urge-obama-challenge-eu-ets-0918>.

²²¹ International Air Line Pilots Associations, "ALPA applauds U.S. House passage of EU ETS Prohibition Act," online: (2012) <http://finance.yahoo.com/news/alpa-applauds-u-house-passage-233300375.html>.

²²² See US Bill S. 1956, *supra* note 84.

²²³ *Ibid* at art. 2(a).

prohibitions.²²⁴ The Bill also directs the Secretary and the FAA to further conduct international negotiations in pursuit of a worldwide approach to aviation-related carbon emissions, and to hold US aircraft operators harmless in case they incur costs in their participation of the EU ETS.²²⁵²²⁶

4. In reaction to the objections: The EU's "Stop the Clock"

After the adoption of a modified version of the Delhi Declaration at the 194th ICAO Council session in 2011, the Council has continued its work towards creating a global market-based measure for international aviation based on collaboration and mutual agreement between all States. Most recently, at the ICAO Council meeting of November 9th, 2012, a special Council High-level Group was formed, composed of senior government officials nominated by their administrator so as to ensure geographical representation. This Group will provide recommendations both on policy issues regarding the feasibility of such a global market-based measure scheme and on the development of a policy framework regarding the implementation of such a market-based measure.²²⁷

Because of the encouraging development resulting from the 194th ICAO Council session towards a global market-based scheme to regulate greenhouse gases from the aviation industry, the EU announced a "stop the clock" on November 12, 2012 as a gesture of goodwill. The clock-stopping gesture entailed the "temporary derogation from enforcement

²²⁴ Ibid at art. 2(c)(2)(a).

²²⁵ Ibid at art. 3(a).

²²⁶ Congressional Budget Office, "S. 1956, European Union Emissions Trading Scheme Prohibition Act of 2011," online: (2012) <http://www.cbo.gov/publication/43510>.

²²⁷ International Civil Aviation Organization, "New ICAO Council high-level group to focus on environmental policy challenges," online: (2012) <http://www.icao.int/Newsroom/Pages/new-ICAO-council-high-level-group-to-focus-on-environmental-policy-challenges.aspx>.

of compliance obligations for emissions generated up to the end 2012 and the associated April 2013 surrender obligation.”²²⁸ Emissions from flights in 2013 continue to be covered by the EU ETS, and should be monitored and verified by their aircraft operators.

The focal point of the ICAO 38th General Assembly from September 24th to October 4th, 2013 will be adopting a global solution to address aviation’s rising greenhouse gas emissions. If clear and sufficient progress has been made during this Assembly, the Commission will propose further appropriate legislative action regarding the inclusion of extra-EU aviation activity into the EU ETS.²²⁹

²²⁸ European Commission, "Frequently asked questions with regard to Commission Proposal to defer EU ETS international aviation compliance by one year," (2013) at 4.

²²⁹ Ibid., at 2.

Chapter 5 – Deficiencies in the EU ETS relevant to developing states as compared to the UNFCCC and Kyoto Protocol

Neither the UNFCCC nor the Kyoto Protocol consider all States to be equal in the eyes of climate change mitigation. Both treaties make a clear distinction between Developed States and Developing States and furthermore introduce the concept of “common but differentiated responsibilities and respective capabilities” to further attribute the weight of the existing environmental damage and future climate mitigation between States. Additionally, the treaties require Developed States to give consideration and provide assistance to Developing States in their quest to mitigate climate change. The EU ETS, in its position as the EU’s mechanism for greenhouse gas emission mitigation in the execution of the EU’s UNFCCC and Kyoto Protocol climate change commitments, should be in full conformity with all UNFCCC and Kyoto Protocol principles.

1. The UNFCCC

The UNFCCC includes the principle of “common but differentiated responsibilities and respective capabilities” (the CBDRRC principle).²³⁰ Based on this principle, all States have a ‘common’ responsibility to protect the climate system and to ensure that activities within their jurisdiction or control do not damage the environment beyond their own territory.²³¹ However, with regard to the environmental damage already done, the UN affirmed that “the responsibility for containing, reducing and eliminating global

²³⁰ See UNFCCC, *supra* note 14 at art. 3(1) and art. 4(1).

²³¹ Duncan French, "Developing States and International Environmental Law: The Importance of Differentiated Responsibilities," *International & Comparative Law Quarterly* 49, no. 01 (2000) at 45.

environmental damage must be borne by the countries causing such damage, must be in relation to the damage caused and must be in accordance with their respective capabilities and responsibilities".²³² Historic and current greenhouse gas emissions are therefore unevenly attributed among the Parties as reflected in the categorization of Annex I Parties and non-Annex I Parties, with further differentiation made to take into account the different capabilities, situations and vulnerabilities of the Parties.

Even though the CBDRRC principle has become an essential part of international environmental law, the obligations it generates and their point of association are not clear-cut. On the one hand, the obligations could be associated with the State's level of economic development and capabilities, and on the other hand it could be based on the State's contribution to greenhouse gases in the atmosphere. The CBDRRC obligations in the UNFCCC appear to be associated with a combination of both.²³³ Moreover, the nature of the obligations associated with the CBDRRC principle on the whole is not internationally pronounced. However, the UNFCCC explicitly stipulates the obligations related to this principle to both Annex I and Annex II Parties in three categories: implementation, assistance and central obligations.

Annex I Parties are subject to specific requirements to demonstrate that they are taking the lead in combating climate change and the adverse effects thereof, such as (i) adopting national policies, (ii) taking corresponding measures on the mitigation of climate change, (iii) limiting their greenhouse gas emissions and (iv) protecting their greenhouse gas sinks and reservoirs.²³⁴ These Party States must aim to return to their 1990 levels of

²³² United Nations, "General Assembly, 85th plenary meeting," (1989).

²³³ See Scott and Rajamani, *supra* note 3 at 477.

²³⁴ See UNFCCC, *supra* note 14 at art. 4(2)(a).

greenhouse gas emissions.²³⁵ However, Annex I Parties with economies in transition are allowed a certain degree of flexibility regarding these commitments.²³⁶

Annex II Parties are required to provide financial resources to developing country Parties in order for them to meet the full costs incurred in providing the Secretariat with an inventory of their territories' greenhouse gas emissions and sinks, and a general description of the steps they will be taking to implement the provisions of the Convention.²³⁷ Developing country Parties that are particularly vulnerable to the adverse effects of climate change shall also be assisted financially by Annex II Parties in meeting the costs of adaptation.²³⁸ Additionally, the transfer of, or access to, environmentally sound technologies and know-how to developing country Parties shall be facilitated by Annex II Parties, in order to enable these Parties to implement the provisions of the Convention.²³⁹

All Parties are also required to give special consideration to developing country Parties that are especially vulnerable to the adverse effects of climate change or to the impact of the implementation of measures taken to respond to climate change.²⁴⁰

The European Union itself, as well as its 27 Member States, are categorized as both Annex I Parties and Annex II Parties to the UNFCCC and Kyoto Protocol.

2. The Kyoto Protocol

Because of the vulnerable character of Developing States, among which the Small Island States of the Caribbean, both the UNFCCC and the Kyoto Protocol have included

²³⁵ Ibid at art. 4(2)(b).

²³⁶ Ibid at art. 4(6).

²³⁷ Ibid at art. 4(3) and art. 12(1).

²³⁸ Ibid at art. 4(4).

²³⁹ Ibid at art. 4(5).

²⁴⁰ Ibid at art. 4(8).

provisions in order to minimize the adverse effects of the implementation of measures taken by the Developed States to respond to climate change. The Preamble of the UNFCCC states that “standards applied by some countries may be inappropriate and of unwarranted economic and social cost to other countries, in particular developing countries” and 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”.²⁴¹ The Kyoto Protocol further elaborates on the UNFCCC and in turn, specifically strives “to implement policies and measures [...] 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”, including small island country Parties.²⁴²

Other Developed State responsibilities towards Developing States include:

- (1) to give full consideration to the specific needs, concerns and special circumstances of the economies that are vulnerable to the adverse effects of climate change and/or the implementation of measures to respond to climate change²⁴³;
- (2) to promote, facilitate and finance the transfer of environmentally sound technology and know-how²⁴⁴;

²⁴¹ Ibid at preamble, para. 10 and 21.

²⁴² See Kyoto Protocol, *supra* note 25 at art. 2(3).

²⁴³ See UNFCCC, *supra* note 14 at art. 3(2) and art. 4(10).

²⁴⁴ Ibid at art. 4(5) and see Kyoto Protocol, *supra* note 25 at art. 11(2)(b).

- (3) to assist in meeting the costs of implementation of measures and the costs of adaptation to the adverse effects of climate change²⁴⁵;
- (4) to exchange or provide assistance in the strengthening of national capacity building²⁴⁶.

The Conference of the Parties of the Kyoto Protocol also ensures that a share of the proceeds from the certified project activities shall assist Developing Party States that are particularly vulnerable to the adverse effects of climate change by helping cover the costs of adaptation.²⁴⁷

3. The EU ETS

The UNFCCC lays out the problem of climate change and creates a framework for its Parties within which global climate change mitigation measures should be created. The Kyoto Protocol further develops on the framework of the UNFCCC, setting out obligations and binding targets for the reduction of greenhouse gas emissions to its Parties. As a way of executing its UNFCCC and Kyoto Protocol climate change commitments, the EU created and implemented the EU ETS as a mechanism to lower their collective CO₂ emissions. The EU ETS should therefore be compliant with all UNFCCC and Kyoto Protocol principles, such as the CBDRRC principle.

Professor Joanne Scott from the University College London and Professor Lavanya Rajamani from the Centre of Policy Research in New Delhi write that “the EU is not giving

²⁴⁵ See UNFCCC, *supra* note 14 at art. 4(3) and art. 4(4).

²⁴⁶ See Kyoto Protocol, *supra* note 25 at art. 10(e).

²⁴⁷ *Ibid* at art. 12(8).

adequate weight to the principle of Common but Differentiated Responsibilities and Respective Capabilities”.²⁴⁸ According to Scott and Rajamani, the dominant system boundary in global greenhouse gas emissions is production-based. This entails that the State in which the emissions are generated or produced is the relevant territory connection factor. This State should therefore be allocated responsibility for the emissions.²⁴⁹ In an attempt to satisfy the Chicago Convention’s principle of non-discrimination²⁵⁰, the dominant territory connection factor used by the EU ETS is market access. Flights that depart from or land at an EU airport are covered by the scheme, unless automatically excluded by the *de minimus* rule or exempted by corresponding third country climate change mitigation measures. The EU ETS therefore does not distinguish or discriminate between the nationalities of airlines. However, because of this non-discriminatory approach, the EU ETS also does not make a distinction between the countries of departure or countries of destination of the flights covered by the scheme, or whether these countries are UNFCCC Annex I Parties or developing country Parties which are vulnerable to the adverse effects of climate change or to the impact of the implementation of measures taken to respond to climate change.

Though the EU’s Impact Assessment in 2006 held that the EU ETS “would be fully in line” with the CBDRRC principle,²⁵¹ the European Commission has recently argued that the principle is not applicable to the EU ETS, as this principle only “applies to States and the climate change measures that they take”. Because the EU ETS does not apply to States, but

²⁴⁸ See Scott and Rajamani, *supra* note 3.

²⁴⁹ *Ibid* at 475.

²⁵⁰ Art. 11 of the Chicago Convention.

²⁵¹ See EC Impact Assessment 2006, *supra* note 115 at 52-53.

to businesses active in the EU market, the European Commission does not consider the CDDRRC principle to be applicable to the EU ETS.²⁵²

According to Scott and Rajamani, the validity of the EU's argumentation about the non-application of the CDDRRC principle "rests upon a characterization of the Aviation Directive that fails to capture its full extent"²⁵³. Firstly, they state that the EU ETS is applicable to both airlines and states. The application of the EU ETS is namely dependent upon the conduct of the third country from which a flight to the EU originates. If a third country were to adopt climate change mitigations measures which have an environmental effect at least equivalent to that of EU ETS, the EU would consider creating a partial exemption from the scheme for flights into the EU originating from that third country.²⁵⁴ The EU ETS is only applicable to flights from third countries that do not have an equivalent climate change mitigation measure. Therefore, third country conduct determines whether a flight will be covered by the EU ETS or not, and in doing so, the EU ETS also applies to states and not only to airlines. Second of all, the CDDRRC principle forms an integral part of the climate change regime of the UNFCCC framework and should therefore be taken into account in every aspect of the climate change mitigation measures taken by the EU as part of their execution of its UNFCCC and Kyoto Protocol obligations. The principle also does not cease to be relevant when climate change measures are directed at businesses active in their own home state. The EU's argument against the application of the CDDRRC principle therefore appears not to be based on the material impact of the measure, but rather on the identity of the actor. Based on this reasoning, Scott and Rajamani consider the CDDRRC principle to be applicable to EU ETS.

²⁵² See Runge-Metzger, *supra* note 90 at 40.

²⁵³ See Scott and Rajamani, *supra* note 3 at 480.

²⁵⁴ See EC Directive 2008, *supra* note 48 at preamble, number 17.

Now that the CDDRRC principle is considered to be applicable to the EU ETS, the question whether the scheme abides by the CDDRRC principle will depend upon how the conditions for the exemption of a third country with ‘measures to reduce the climate change impact of aviation’ shall be applied. The 2008 Directive contains the authority for the European Commission to consider options available in order for the EU ETS to interact optimally with a third country’s measures. This ‘optimal interaction’ may include the exemption of flights to the EU originating from that third country from the application of the scheme. The conditions to this provision are, however, considerably vague. The preamble casts light on the interpretation of this provision by stating that the climate change mitigation measures should “have an environmental effect at least equivalent to that of [the EU ETS]”.²⁵⁵ Though a preamble does not have a binding legal force, this reference to equivalence has also been repeated multiple times by the EU’s Commissioner for Climate Action in her articles on the European Commission’s website.²⁵⁶

This concept of equivalence can be based on the effort of the country in proportion with the available resources, or based on the outcome of the measure, regardless of the relative effort. The preamble seems to appeal to the outcome-based approach. Therefore, in order for flights originating in a third country to be exempted, the environmental effect of their measures should be the equivalent of the EU ETS. Equal treatment, not differentiation, seems to be the guiding principle for the applicability of third country measures. And if equal treatment is the case, then the EU ETS is not consistent with the CDDRRC principle.²⁵⁷

²⁵⁵ Ibid.

²⁵⁶ EU Commissioner for Climate Action, Connie Hedegaard, "A clear and fair incentive to pollute less," online: (2011) http://ec.europa.eu/commission_2010-2014/hedegaard/headlines/articles/2011-10-31_01_en.htm. and EU Commissioner for Climate Action, Connie Hedegaard, "Time to get serious about aviation emissions!," online: (2011) http://ec.europa.eu/commission_2010-2014/hedegaard/headlines/articles/2011-05-31_01_en.htm.

²⁵⁷ See Scott and Rajamani, *supra* note 3 at 483.

The Impact Assessment, however, argues that the EU ETS is “fully in line” with the CDDRRC principle. Firstly, the Impact Assessment states that the CDDRRC principle does not apply to unilateral measures adopted by an Annex I Party, as it only imposes demands on businesses of developing country.²⁵⁸ This argument has been discussed and rejected above. Second of all, the Impact Assessment further defends the EU ETS’ compliance to the CDDRRC principle by stating that developed country airlines will bear a larger proportion of the costs of complying with the EU ETS than developing country airlines because of their relative higher market share, and will therefore carry more responsibility for current emissions.²⁵⁹ However, even though the design of the EU ETS results in the practical effect of developed country airlines carrying a heavier burden than developing country airlines,²⁶⁰ this does not sufficiently support the claim of consistency to the CDDRRC principle for the EU ETS. The CDDRRC principle combines the country’s current responsibility for emissions with its historical responsibilities and relative economic capabilities. In spite of the inequality of economic impact of the EU ETS on developed and developing country airlines, the scheme does not take into account these historical responsibilities and relative economic capabilities, and is therefore not in compliance with the CDDRRC principle.²⁶¹ Thirdly, the Impact Assessment points out that “while the impacts of climate change tend to create most difficulties for people in poorer regions of the world, increased ticket prices resulting from the EU ETS will be predominantly borne by the wealthier segments of the population, both within the EU and globally”²⁶². Scott and Rajamani assert that the justification of a climate change measure based on a claim that only the global rich, and not the poor, shall be required

²⁵⁸ See EC Impact Assessment 2006, *supra* note 115 at 52.

²⁵⁹ *Ibid.*

²⁶⁰ See Kulovesi, *supra* note 4 at 552-53.

²⁶¹ See Scott and Rajamani, *supra* note 3 at 483-85.

²⁶² See EC Impact Assessment 2006, *supra* note 115 at 36.

to pay must be supported by clear evidence. Additionally, the distributive effects must be assessed by monitoring the potential negative impact of the measure on the global poor. The EU's Impact Assessment shows neither.²⁶³ Ultimately, the arguments brought forth by the Impact Assessment could not persuade Scott and Rajamani of the EU ETS' compliance with the CDDRRC principle. In view of this conclusion, Scott and Rajamani propose two ways to correct the EU ETS in conformity with the CDDRRC principle.

4. Necessary revision for the EU ETS

The CDDRRC principle 'authorizes a regime of differentiation in favour of developing countries'.²⁶⁴ In order for the EU ETS to be compliant with this principle, Scott and Rajamani propose two ways of adapting the scheme. Both proposals assess the differential treatment of developing countries and developing country flights. A clear definition of both terms is therefore necessary. Annex I of the UNFCCC includes a list of developed countries and economies in transition. Even though this list excludes some of the world's richest countries, it is proposed to consider all non-Annex I countries as developing countries. As the EU ETS maintains a departure-based system boundary, the country from which a flight departs is responsible for the emissions generated during that flight. Based on this notion, it is proposed that all flights departing from a developing country should be considered a developing country flight.

Their first proposal is designed to differentiate between countries with regard to the conditions for gaining exemption from the EU ETS. Conditions should differentiate for

²⁶³ See Scott and Rajamani, *supra* note 3 at 486.

²⁶⁴ Lavanya Rajamani, "European Union, climate action hero?," online: (2011) <http://www.indianexpress.com/news/european-union-climate-action-hero-/826290/>.

developed countries and developing countries. Developed countries are to be exempted when they have adopted measures that are at least equivalent to those of the EU. Developing countries should adopt measures that are in proportion with their respective responsibilities and capabilities. A developing country's responsibilities could be defined by a valuation of their historical and current emissions, whereas a developing country's capabilities could be defined by referencing to its per capita GDP. Whereas the Chicago Convention prohibits nationality discrimination of aircraft operators, this proposal only differentiates between flying routes, not nationality of the aircraft operator flying. The EU ETS would therefore remain in conformity with the Chicago Convention as well as the CDDRRC principle.

Their second proposal is more straightforward, as it suggests that all airlines and routes be treated the same, but all revenues derived from developing country flights should be allocated to a global climate fund. The revenues could be used to finance climate change mitigation and adaptation activities in developing countries.

In conclusion, Scott and Rajamani draw attention to the fact that the EU ETS should be, but is not, compliant with the CDDRRC principle, and propose two ways in which the EU ETS could conform to this principle whilst nevertheless treating all airlines, passengers and routes the same.²⁶⁵

5. Earmarking of the allowance revenues

The lack of earmarking of revenues, or division from revenues derived from developing country flights in the EU ETS, is a big bone of contention. Even within the UNFCCC framework and the Kyoto Protocol, the Kyoto Conference of the Parties is

²⁶⁵ See Scott and Rajamani, *supra* note 3 at 487-94.

obligated to ensure that a share of the proceeds from the certified project activities is used to assist Developing Party States that are vulnerable to the adverse effects of climate change by helping them meet the costs of adaptation.²⁶⁶ The CDBRRC principle also obliges UNFCCC developed countries to provide developing countries with finance and technology so that “the flow of finance is expected to be *from* developed *to* developing countries”, and not the other way around as would currently be the case.²⁶⁷

In line with these treaties, one of the proposals by Scott and Rajamani suggest that the EU ETS should allocate the revenues from developing country flights to a global climate fund to be used to finance climate change mitigation and adaptation activities in developing countries. However, the lack of earmarking only further substantiates the notion that the revenues from the EU ETS are but a potential source of general revenue to EU governments to be spent at their discretion, and not intended the use of climate change mitigation.²⁶⁸

²⁶⁶ See Kyoto Protocol, *supra* note 25 at art. 12(8).

²⁶⁷ See Scott and Rajamani, *supra* note 3 at 479.

²⁶⁸ See Havel and Mulligan, *supra* note 7 at 31-32.

Chapter 6 – The impact of the unrevised EU ETS on Caribbean islands states

In 2012, international tourist arrivals surpassed a record 1 billion tourists globally for the first time in history. The Caribbean region received 20.9 million (2%) of all these international tourists, which amounts to an increase of 4% as compared to 2011.²⁶⁹ As most Caribbean island state economies depend on tourist arrivals and expenditures to a certain degree, and tourist arrivals are dependent on aviation or cruise ship traffic, the Caribbean tourist sector is always increasingly concerned with the impact of outside influences, such as the EU ETS, on the aviation or cruise ship industry.

1. Introduction to the Caribbean

The definition of the word “Caribbean” is used interchangeably and may vary depending on its user. Within the United Nations Geoscheme, the Caribbean is a sub region of the Americas.²⁷⁰ However, according to the UN Geoscheme, Bermuda is not part of the Caribbean, but belongs to Northern America, as it is located in the North Atlantic Ocean. Furthermore, other than Bermuda, the Cayman Islands and the Turks-and-Caicos Islands, all other Caribbean islands fall within the “Small Island Developing State” category of the UN Geoscheme. Haiti is the only island considered both a Small Island Developing State and a Least Developed State.

²⁶⁹ UNWTO, "January 2013," *World Tourism Barometer* 11, no. 1 (2013).

²⁷⁰ United Nations, "Composition of macro geographical (continental) regions, geographical sub-regions, and selected economic and other groupings," online: (2012) <http://millenniumindicators.un.org/unsd/methods/m49/m49regin.htm#americas>.

The Caribbean may also refer to the Caribbean Community (CARICOM) or the Association of Caribbean States (ACS). Not all Caribbean islands are members to either or both of these organizations, whereas certain non-Caribbean States are.

Research reports regarding the Caribbean usually indicate which islands are covered in their reports, as data collection and research methodology may exclude islands and therefore influence how broad the scope of the “Caribbean” is.

Contrary to the UN Geoscheme, Bermuda shall be included in the definition of the “Caribbean” as used in this thesis. Albeit that Bermuda is not located in the Caribbean Sea, it is still a small island State with a historical background similar to several other small island States within the Caribbean, located relatively close to the Caribbean Sea, and shall therefore be considered a Caribbean island state for the purpose of this thesis.

The Caribbean is a region consisting of the Caribbean Sea, the Caribbean islands and the surrounding coasts. It is geographically located southeast of North America and the Gulf of Mexico, north of South America and east of Central America. The islands are mostly situated on the Caribbean tectonic plate, and partly on the North American tectonic plate.

The Caribbean consists of approximately 1.409 islands, split up into 31 island groups. A population of almost 40 million people²⁷¹ is spread out over a surface area of close to 240.000 km². The main sources of income of these Caribbean island states vary from crude oil refining, agricultural production and shipping to tourism and financial services, with varying degrees of dependability.

²⁷¹ Central Intelligence Agency, "The World Factbook," online: (2009)
https://www.cia.gov/library/publications/the-world-factbook/wfbExt/region_cam.html.

a. The historical influence of Europe on the Caribbean

Historically, the Europeans have had an ‘influence’ on the Caribbean since the 15th century, after Christopher Columbus inaugurated a period of European exploration and colonization with his voyage to the West Indies in 1492. Since then, the Dutch, British, French, Danish, Spanish and Portuguese have established a long-term presence on the islands by, among other things, colonizing every single Caribbean island at some point in time, introducing the cultivation of sugar cane and the subsequent introduction of the Atlantic slave trading business to increase the sugar cane production, bringing along European diseases that strongly reduced the native populations, and settling into the Caribbean themselves.

Out of all the European powers present from the 15th through the 19th century, the Dutch, British and French presence, influence and appearance still remains deeply engrained in the language, culture, legal systems and international affairs of many Caribbean islands. Indubitably, the relationship between the Caribbean and Europe has changed much since the 19th century. The colonial ties between the Caribbean and Europe have evolved into three groups:

- the British overseas territories (Anguilla, Bermuda, British Virgin Islands, Cayman Islands, Montserrat and Turks-and-Caicos Islands),
- the Dutch overseas territories (Aruba, Curacao and Sint Maarten) and special municipalities (Bonaire, Saba and Sint Eustatius), and
- the French outermost regions (Guadeloupe, Martinique and Saint Martin) and overseas territory (Saint Barthelemy).

The colonial ties and historical presence of Europe in the Caribbean region has fostered interregional partnerships and agreements relating to trade and investment, such as the Lome Convention and CariForum with the African, Caribbean and Pacific Group of States (ACP), the Caribbean Community (CariCom), and the Treaty of Basseterre.

b. The role and importance of aviation to Caribbean island states

Worldwide, the contribution of tourism to gross domestic product (GDP) is estimated at some 5%. However, for small islands and developing countries, such as the island states in the Caribbean, this contribution may account for as much as 25% of their GDP. The Caribbean as a whole currently holds a worldwide market share of 2.1%, which is 0.5% less than the entire continent of South America.

Tourism is therefore a significant source of revenue for many of the Caribbean island states. In 2011, the direct contribution of tourism to the Caribbean's GDP was US\$ 15.1 billion, 4.5% of the total GDP, and directly supported 614,000 jobs. The total contribution of tourism amounted to US\$ 47.1 billion, 13.9% of the total GDP of the Caribbean.²⁷² The total contribution of tourism to the GDP ranges from 5.5% for the Dominican Republic to 74.2% for Antigua and Barbuda.

²⁷² UNWTO, "Tourism Highlights 2012," (2012).

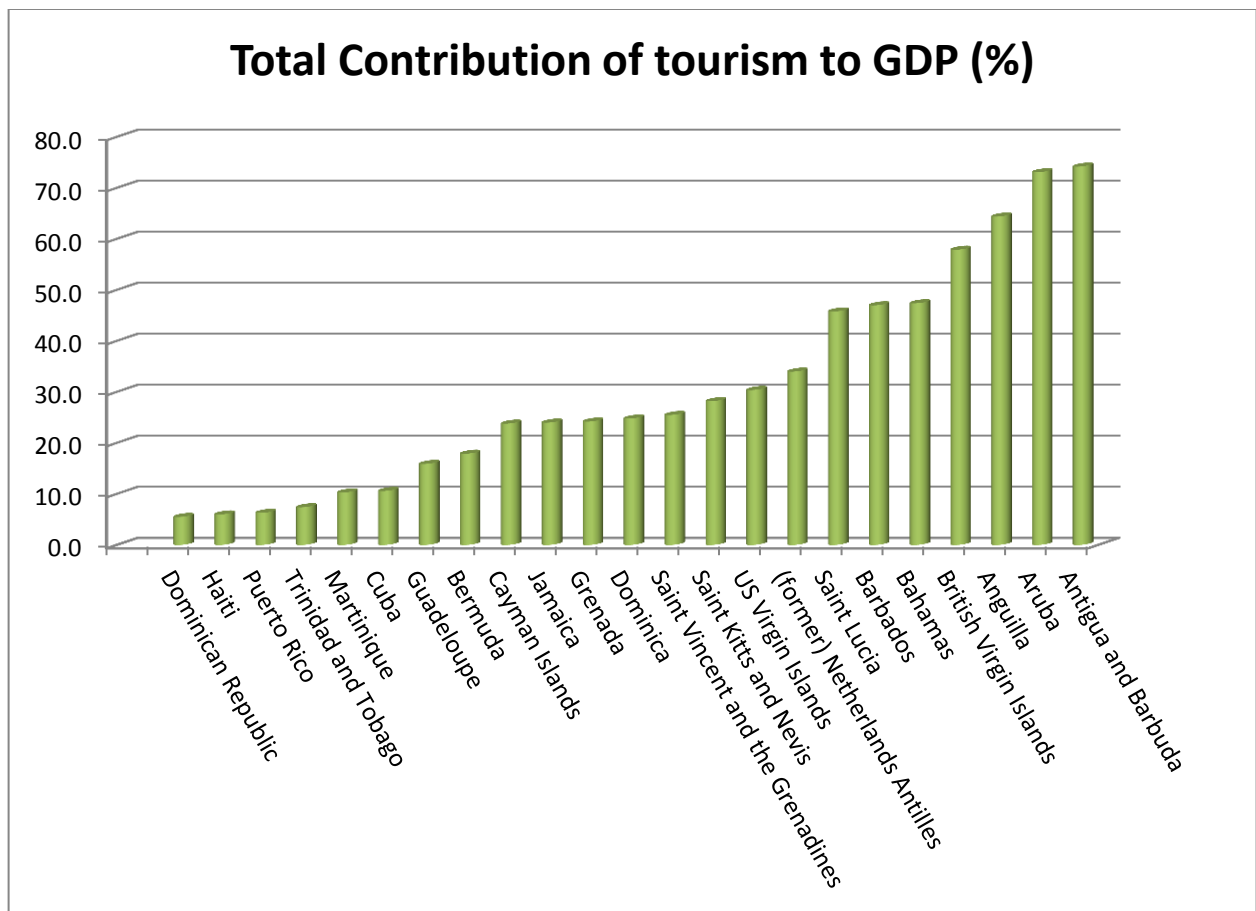


Figure 2

The Caribbean is predominantly a holiday destination. Because all Caribbean states are islands, the only ways for international tourists to reach them is by air or by sea, which makes aviation an essential player in the touristic sector of the Caribbean. In 2011, 51% of all international inbound tourism arrived at their destination by air and 6% by sea. The Caribbean received a total of 20.8 million tourists by air,²⁷³ and 5.72 million cruise passengers originating out of a North American port in that year.²⁷⁴

²⁷³ Ibid.

²⁷⁴ U.S. Department of Transportation, "North American Cruise Statistical Snapshot, 2011," (2012).

2. The UNFCCC framework, the Kyoto Protocol and Caribbean island states

Caribbean island states are greatly dependent on other, bigger States to acknowledge their vulnerability to climate change. This vulnerability does not only stem from the damaging long term effects of global climate change to their islands, but also to the short term impacts of climate change mitigation measures implemented by other States.

It is therefore of great importance to Caribbean island states to note the safeguards implemented in the UNFCCC, the nuances in responsibilities and privileges between Developed States and Developing States in the Kyoto Protocol, and the differences amongst Caribbean island states in relation to their participation and position in these treaties.

It is in these safeguards and nuances that the UNFCCC and Kyoto Protocol have tried to protect the frail economies of developing countries in order to create a framework that is globally acceptable and legally just, taking into account the history of global pollution and the positions, responsibilities and capabilities of developed countries versus their developing counterparts.

a. The legal status of Caribbean island states

Not all Caribbean island states are alike in relation to the UNFCCC framework and Kyoto Protocol. Their varying status depends not only on whether or not they are Party to these treaties, but also on their UN classification of Least Developed Country (LDC), Small Island Developing State (SIDS)²⁷⁵ or non-developing countries.

²⁷⁵ United Nations Office of the High Representative for the Least Developed Countries, Landlocked Developing Countries and Small Island Developing States, "List of Small Island Developing States," online: (2013) <http://www.un.org/special-rep/ohrlls/sid/list.htm>.

UN classification of Caribbean Island States	Party to UNFCCC ²⁷⁶	Party to Kyoto Protocol ²⁷⁷	LDC	SIDS
Anguilla				✓
Antigua-and-Barbuda	✓	✓		✓
Aruba	Excluded	Excluded		✓
Bahamas	✓	✓		✓
Barbados	✓	✓		✓
Bermuda				
Bonaire	Excluded	Excluded		✓
British Virgin Islands				✓
Cayman Islands				
Cuba	✓	✓		✓
Curacao	Excluded	Excluded		✓
Dominica	✓	✓		✓
Dominican Republic	✓	✓		✓
Grenada	✓	✓		✓
Guadeloupe	✓	✓		
Haiti	✓	✓	✓	✓
Jamaica	✓	✓		✓
Martinique	✓	✓		
Montserrat				✓
Puerto Rico				✓
Saba	Excluded	Excluded		✓
Saint Barthélemy	Excluded	Excluded		
Saint Kitts-and-Nevis	✓	✓		✓
Saint Lucia	✓	✓		✓
Saint Martin	✓	✓		
Saint Vincent-and-the-Grenadines	✓	✓		✓
Sint Eustatius	Excluded	Excluded		✓
Sint Maarten	Excluded	Excluded		✓
Trinidad-and-Tobago	✓	✓		✓
Turks-and-Caicos Islands				
United States Virgin Islands				✓

Table 2

Out of the 31 Caribbean island states, 24 island states have been defined by the UN Statistics Division²⁷⁸ as ‘Small Island Developing States’, and only 1 (Haiti) has been

²⁷⁶ See Status of Ratification of the UNFCCC, *supra* note 15.

²⁷⁷ See Status of Ratification of the Kyoto Protocol, *supra* note 22.

²⁷⁸ United Nations Statistics Division, "Composition of macro geographical (continental) regions, geographical sub-regions, and selected economic and other groupings," online: (2012) <http://unstats.un.org/unsd/methods/m49/m49regin.htm>.

classified as a ‘Least Developed Country’. The French outermost regions are not considered within this classification. However, Bermuda and Cayman Islands are not explicitly defined as Developed or Developing States by the UN Statistics Division.²⁷⁹

Of the 31 Caribbean island states, only 16 States are Party to the UNFCCC and the Kyoto Protocol. No Caribbean Party has individually committed itself to an emission limitation or reduction as per Annex B of the Kyoto Protocol. The Dutch overseas territories²⁸⁰, French overseas territories²⁸¹ and British overseas territories²⁸² have been explicitly excluded from the scope and application of the Protocol. 13 out of the 16 Party island states can be defined as small island countries as per article 4.8 sub a of the UNFCCC. Article 4 of the UNFCCC concerns the common commitments of all Party States, and the specific commitments for developed country Parties, other Parties included in Annex II and other Developed parties included in Annex II to developing country parties, such as these small island countries. Besides, only these 13 ‘small island countries’ party to the UNFCCC and Kyoto Protocol can be classified as ‘Developing Country Parties’ and can subsequently rely on the protection and privileges related to this position within the UNFCCC framework. The remaining 15 Caribbean island states that are not party to the UNFCCC or Kyoto Protocol do not receive consideration or assistance such as the Party island states as provided by these treaties for being a developing country or a small island state.

²⁷⁹ Bermuda is defined as a Developed Country by the CIA World Factbook, whereas the Cayman Islands are defined as a Developing Country. However, the UN Statistics Division nor the UN Office of High Representatives have explicitly defined either island state as Developed or Developing Country.

²⁸⁰ The Dutch overseas territories are Aruba, Bonaire, Curacao, Saba, Sint Eustatius and Sint Maarten.

²⁸¹ The French overseas territory in the Caribbean is Saint Barthélemy.

²⁸² The British overseas territories in the Caribbean are Anguilla, British Virgin Islands, Montserrat and Turks-and-Caicos Islands.

b. The UNFCCC and Kyoto Protocol safeguards

Albeit that the preamble of a treaty does not establish legally binding obligations, it is used to shine light on the motivations of the treaty and the basic assumptions on which the treaty is based.²⁸³ The preamble of the UNFCCC notes that, even though there are a great many uncertainties in predicting climate change, its global nature calls for all States to work together in accordance with their common but differentiated responsibilities and respective capabilities, and their social and economic conditions. The principles in article 3 of the UNFCCC repeat the notion of ‘common but differentiated responsibilities and respective capabilities’ (the CBNDRRC principle), and add that the Developed States are to take lead in combating climate change and the adverse effects thereof. However, in their doing so, these Developed States must give full consideration to specific needs and special circumstances of developing country Parties that are particularly vulnerable to the adverse effects of climate change. Furthermore, in the implementation of their commitments in article 4 of the UNFCCC, all Parties must give full consideration to meet the specific needs and concerns of developing country Parties, such as small island countries, that arise from the impact of the implementation of response measures by other Parties.

The 16 Caribbean island states that are Party to the UNFCCC are all considered both ‘developing countries’²⁸⁴ as well as ‘small island countries’ within the UNFCCC framework. It could additionally be debated that most Caribbean island states qualify as ‘countries with low-lying coastal areas’, ‘countries with areas prone to natural disasters’ (such as hurricanes) and ‘countries with areas with fragile ecosystems’, as per article 4.8 subs b, d and g. Even

²⁸³ International Union for Conservation of Nature, "The explanatory guide to the international treaty," online: <http://data.iucn.org/dbtw-wpd/html/EPLP057-expguide-international-treaty/Preamble.html>.

²⁸⁴ Except for Guadeloupe, Martinique and Saint Martin, as these are French outermost regions and are included in the territorial scope of the European Economic Area (EEA) to which the EU ETS is directly applicable. However, they are still to be considered ‘small island countries’.

though the preamble speaks of ‘small island countries’ and ‘developing countries’, the provisions in the UNFCCC mention only ‘developing country Parties’. In its literal interpretation, the remaining 15 Caribbean island states that are not Party to either treaty will therefore not be privileged to the safeguards of the UNFCCC.

With regard to the more specific provisions of the Kyoto Protocol, Caribbean island states party to the Protocol are considered developing country parties. Small island countries are once more explicitly mentioned in the Kyoto Protocol by way of article 2.3, in which the obligations of Annex I Parties are set out. Annex I Parties are to strive to implement policies and measures in such a way as to minimize adverse effects of climate change, international trade, and social, environmental and economic impacts on other Parties, especially developing country Parties such as identified in Article 4, paragraphs 8 and 9, of the Convention, whilst taking into account their obligations as per the UNFCCC.

c. The discrepancies between the EU ETS and the UNFCCC and Kyoto Protocol relevant to Caribbean island states

Based on the safeguards as provided in the UNFCCC and Kyoto Protocol, the adverse effects of both the long term effects of global climate change as well as the short term economic impact of the implementation of policies and measures by Developed Parties on small island countries such as Caribbean island states, should have been given full consideration and should have been striven to be minimized by these Developing Countries.

As generally discussed in Chapter 5, the EU ETS should be, but is not, compliant with the principles of CBDRRC. This deficiency is extremely relevant to Caribbean island

states as they only produce less than 1% of global carbon emissions. Their ‘differentiated responsibilities’ for historical emissions and ‘respective capabilities’ for the reduction of current emissions are therefore significantly lower than those of the EU ETS.

The Caribbean island states are also much more vulnerable, in both the physical and economic sense, to the short and long term effects of global climate change. However, because of the economic impact of the EU ETS, a decrease in tourist arrivals and expenditures is expected to impact the fragile, tourist-dependent economies of many Caribbean island states. Instead of meeting the specific needs and concerns of these developing countries as per the EU’s UNFCCC and Kyoto Protocol obligations, revenue shall flow from the poor developing Caribbean island states to the EU instead of the other way around.²⁸⁵

3. Legal impact of the EU ETS on Caribbean island states

Albeit that the inclusion of international aviation into the EU ETS has been partially exempted for 2012 emissions by the EU’s “stop the clock”, the historical background and the current ties between Caribbean island states and the EU has made it that the EU ETS has not been exempted and is directly or indirectly applicable to flights to or from many of the Caribbean island states. The Caribbean island states are thereby divided into 3 categories: (1) dependencies of EEA States, (2) closely connected areas to EEA States and (3) Others.²⁸⁶

²⁸⁵ See Scott and Rajamani, *supra* note 3 at 479.

²⁸⁶ See European Commission, *supra* note 228 at 2-3.

Caribbean Island States	Dependencies of EEA States	Closely connected to EEA States	Others
Anguilla		✓	
Antigua-and-Barbuda			✓
Aruba		✓	
Bahamas			✓
Barbados			✓
Bermuda		✓	
Bonaire		✓	
British Virgin Islands		✓	
Cayman Islands		✓	
Cuba			✓
Curacao		✓	
Dominica			✓
Dominican Republic			✓
Grenada			✓
Guadeloupe	✓		
Haiti			✓
Jamaica			✓
Martinique	✓		
Montserrat		✓	
Puerto Rico			✓
Saba		✓	
Saint Barthélemy		✓	
Saint Kitts-and-Nevis			✓
Saint Lucia			✓
Saint Martin	✓		
Saint Vincent-and-the-Grenadines			✓
Sint Eustatius		✓	
Sint Maarten		✓	
Trinidad-and-Tobago			✓
Turks-and-Caicos Islands		✓	
United States Virgin Islands			✓

Table 3

a. Direct and continuous application of EU ETS to French outermost regions within the Caribbean

The French outermost regions of Guadeloupe, Martinique and Saint Martin are included in the territorial scope of the European Economic Areas (EEA). Therefore, emissions from flights between airports of these 3 Caribbean island states and (1) EU Member States and the additional EEA States of Norway, Iceland and Liechtenstein, (2) dependencies of EEA States, such as the French outermost regions, (3) Croatia, (4) Switzerland or (5) closely connected areas to EEA States are fully covered by the EU ETS.²⁸⁷

b. Continuous application of EU ETS to other Caribbean outermost regions and overseas territories

Emissions from flights between the 13 Caribbean island states categorized as “closely connected areas to EEA States” and (1) EU Member States and the additional EEA States of Norway, Iceland and Liechtenstein or (2) dependencies of EEA States are also covered by the EU ETS. However, flights between the 13 Caribbean islands themselves are not covered by the scheme.²⁸⁸

c. Exemption of “other” Caribbean island states from the EU ETS

Emissions from flights between the remaining 15 Caribbean island states that are not classified as dependencies of EEA States or closely connected areas to EEA States and any

²⁸⁷ Ibid.

²⁸⁸ Ibid.

other State are exempted by the EU's "stop the clock", as they are classified as "extra-EU flights".²⁸⁹

d. Application of the EU ETS to Caribbean island states explicitly excluded from the UNFCCC and Kyoto Protocol

The unilateral character of the EU ETS, in its execution of the EU's UNFCCC obligations, not only includes third countries party to the UNFCCC and Kyoto Protocol without their prior permission, but also Caribbean island states that have been explicitly excluded from the scope of the UNFCCC and Kyoto Protocol.

The Kingdom of the Netherlands signed and ratified the UNFCCC and Kyoto Protocol only for "the Kingdom in Europe", meaning the territory of the Kingdom situated in Europe. Therefore, the Dutch Caribbean islands of Aruba, Bonaire, Curacao, Sint Maarten, Sint Eustatius and Saba are explicitly excluded from the scope of these two treaties.²⁹⁰

However, not only are emissions from flights arriving into the EU ETS from these islands covered by the scheme, but the islands are considered "closely connected areas to EEA countries" and therefore are not included in the EU's exemption through the "stop the clock".

e. Exclusion of SIDS of being able to supply CERs to the EU ETS

The EU is the largest purchaser of Certified Emissions Reductions (CERs) from the Clean Development Mechanism (CDM) established under the Kyoto Protocol. After the

²⁸⁹ Ibid.

²⁹⁰ See Status of Ratification of the UNFCCC, *supra* note 15 and see Status of Ratification of the Kyoto Protocol, *supra* note 22.

Durban Climate Change Conference in December 2011 (COP17), the European Union decided to limit its market for the supply of CERs to only the Least Developed Countries (LDCs), starting from 2013. This decision includes the only LDC in the Caribbean, namely Haiti, but excludes all Caribbean Small Island Developing States (SIDS) from being able to supply CERs to the EU ETS through project-based emissions reductions, despite their vulnerable position to climate change, their dependence on tourism and the fact that the EU ETS has a negative effect on their economies.²⁹¹

4. Economic impact of the EU ETS on Caribbean island states

Most Caribbean island state economies are highly dependent on tourism. The economic impact of the additional costs imposed on airlines due to the EU ETS is therefore of great interest and importance to Caribbean island states, as an increase in air fares could reduce visitor arrivals and tourist expenditures, as well as increase prices of goods being imported by air from or via the EU.

a. The importance of the EU market share to the Caribbean

Due to the historical link between the Caribbean and Europe, the common language and cultural aspects, the large amount of immigrants from the Caribbean islands living in the European mother country, and direct flights from Europe to the Caribbean, a large market share of the tourist arrivals to the Caribbean island states comes from Europe. Changes to aviation policy or legislation impacting the aviation sector in Europe can therefore directly

²⁹¹ Overseas Development Institute, "The aviation industry, the EU's Emissions Trading Scheme and Small and Vulnerable Economies: development-friendly frameworks," in *Project Briefing*, ed. Jodie Keane (2012).

affect the economy of a small island state with a high tourism dependency and a big European market share.

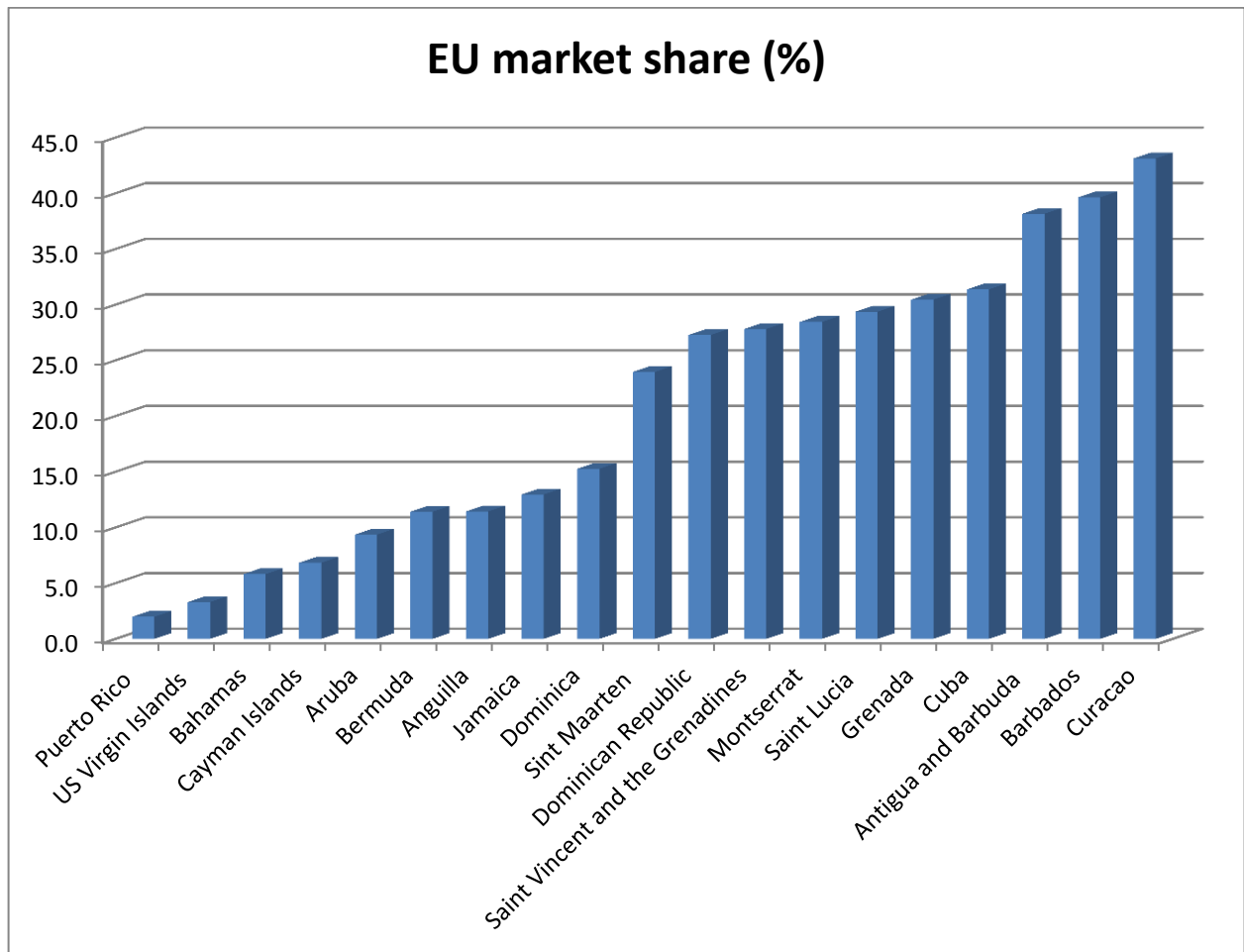


Figure 3

The average EU market share within the Caribbean is 20.4%²⁹², but the EU market share ranges from 2% for Puerto Rico to 43.1% for Curacao. Other islands with a big EU market share are Barbados (39.6%), Antigua and Barbuda (38.2%), and Cuba (31.4%).

²⁹² Based on information available regarding the islands of Anguilla, Antigua and Barbuda, Aruba, Bahamas, Barbados, Bermuda, Cayman Islands, Cuba, Curacao, Dominica, Dominican Republic, Grenada, Jamaica, Montserrat, Puerto Rico, Saint Lucia, Saint Vincent and the Grenadines, Sint Maarten and the US Virgin Islands.

In order to create a preliminary indicator regarding the islands that would be most impacted by a policy changing the amount of EU tourist arriving by air to the Caribbean, we can combine the percentage of the total contribution of the tourism sector to the island's GDP with the EU market share to obtain the island's GDP relating to EU tourism.²⁹³

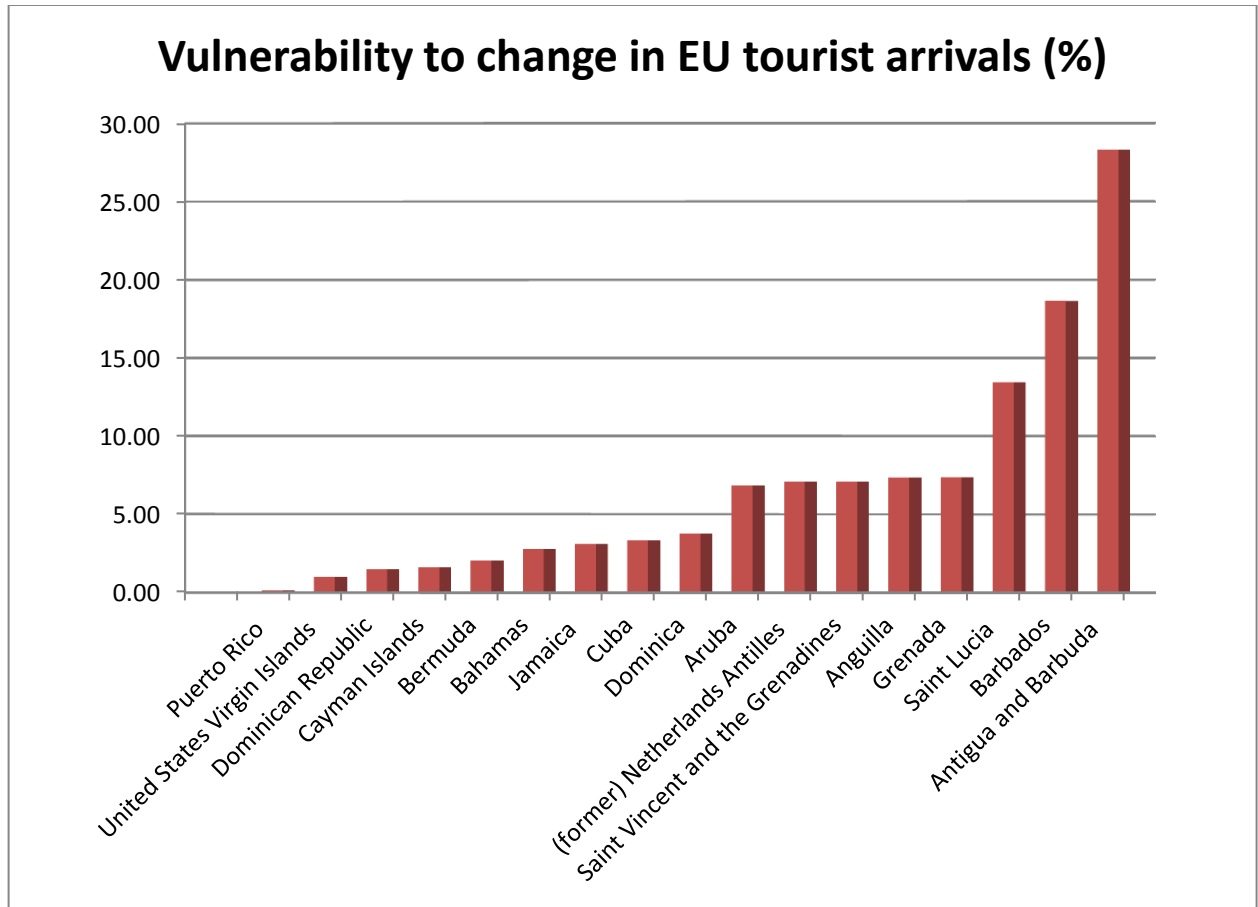


Figure 4

Based on this indicator, Antigua and Barbuda (28.3%), Barbados (18.7%) and Saint Lucia (13.5%) are the three island states most vulnerable to changes in EU tourist arrivals. Puerto Rico (0.12%) is the least affected island state.

²⁹³ Only the islands with information available regarding their 2011 total contribution of tourism to the GDP and their 2011 EU market share were used in this indicator.

b. By comparison: The impact of the UK APD on the Caribbean

The UK Air Passenger Duty (the “APD”) is an excise tax charged per passenger on a national or international flight departing from a UK airport. This tax was introduced in the November 1993 Budget and came into effect on 1 November 1994.²⁹⁴ Small airplanes with an authorized take-off weight of less than 10 tonnes, or less than 20 seats for passengers, are exempted. The tax is also not payable by incoming international passengers with a layover of less than 24 hours after their arrival in the UK. However, in case of a layover of more than 24 hours, the full duty is charged.

Although the APD is generally viewed as a “green” tax²⁹⁵, John Healey, Chancellor of the Exchequer, noted in 2003 that the “[a]ir passenger duty (APD) was introduced in 1994 as a measure whose principal purpose was to raise revenue from the aviation industry but with the anticipation that there would be environmental benefits through its effect on air traffic volumes.”²⁹⁶

In 2008, the APD was restructured with the introduction of “bands”, which set the rates based on the distance between London and the destination country’s capital. The four-tier banding system is also split up into a “reduced” rate, for travel in the lowest class available on the aircraft, and a “standard” rate, for any other class of travel (business, premium, first class).

²⁹⁴ Antony Seely, "Air passenger duty: introduction," (House of Commons Library 2012).

²⁹⁵ Journal Live, "Air passenger duty undermined public confidence in green taxes, say MPs," online: (2011) <http://www.journallive.co.uk/north-east-news/todays-news/2011/07/07/air-passenger-duty-undermined-public-confidence-in-green-taxes-say-mps-61634-29008906/>.

²⁹⁶ House of Commons, "Bound Volume Hansard - Written Answers," online: (2003) http://www.publications.parliament.uk/pa/cm200203/cmhansrd/vo030715/text/30715w18.htm#30715w18.html_sbhd5.

The rates as of April 1, 2012, are as following²⁹⁷:

Band – From 1 April 2012	Reduced rate	Standard rate
Band A (0 – 2,000 miles)	£ 13 (US\$ 20)	£ 26 (US\$ 40)
Band B (2,001 – 4,000 miles)	£ 65 (US\$ 100)	£ 130 (US\$ 200)
Band C (4,001 – 6,000 miles)	£ 81 (US\$ 124)	£ 162 (US\$ 248)
Band D (Over 6,000 miles)	£ 92 (US\$ 140)	£ 184 (US\$ 280)

Table 4

The APD did not only have an impact on low and middle income travelers, but also on parts of the world that heavily relied on tourism²⁹⁸, such as the Caribbean. When the four-tier APD banding system was introduced, the Caribbean governments started protesting this “unjust” and “discriminatory” tax.²⁹⁹ According to the banding system, the Caribbean island states fell into Band C, because their capitals were between 4,001 and 6,000 miles away from London, whereas the entire USA, including Hawaii, California and Alaska, fell into Band B, because Washington was within 2,001 and 4,000 miles from London. This provided the USA an unfair advantage compared to the Caribbean islands.

There is disagreement regarding the effect and impact of the APD on sales. Hayes & Jarvis claims that the “APD ‘shows little impact on sales’ for long-haul”³⁰⁰. However, research by OneCaribbean revealed that “when the [APD] fares are raised progressively, there is a sharp negative reaction after reaching £500 in the UK market”³⁰¹. In September 2011, British Airways announced that they had cut flights and reduced capacity on their Caribbean routes because of the sharp rise of APD charges³⁰²³⁰³. “It is no coincidence that our

²⁹⁷ HM Revenue & Customs, "Rates of Air Passenger Duty (APD)," online: <http://www.hmrc.gov.uk/rates/apd.htm>.

²⁹⁸ International Air Transport Association, "The UK Air Passenger Duty is unfair," online: (2009) <http://www.iata.org/pressroom/airlines-international/october-2009/Pages/2009-10-06.aspx>.

²⁹⁹ OneCaribbean, "Airport Passenger Duty (APD)," online: (2009) <http://www.onecaribbean.org/content/files/airpassengerdutyflyer.pdf>.

³⁰⁰ e-tid.com, "APD ‘shows little impact on sales’ for long-haul," online: (2012) <http://www.e-tid.com/apd-ae%CB%9Cshows-little-impact-on-salesae-for-long-haul/27293/>.

³⁰¹ OneCaribbean, Caribbean Tourism Organization, "Caribbean Tourism Overview, 2009," (2009).

³⁰² BreakingTravelNews.com, "British Airways chief executive Keith Williams blames APD for Caribbean

reduction in the number of services to the Caribbean is accompanied by a rise in services to Florida – a destination that is taxed at a rate 20 per cent less than the Caribbean,” explained chief executive Keith Williams³⁰⁴.

The APD and the EU ETS are alike in a number of ways:

1. The APD is generally thought of as a “green” tax, the ETS is genuinely a green “tax”;
2. The APD is charged on outgoing flights from the UK, the ETS is calculated on the emissions of incoming and outgoing flights from an EU airport;
3. The APD is charged based on the distance from London to the foreign country’s capital and the type of “rate” the passenger is paying, the ETS is charged based on the distance from the place of take-off to the place of arrival;
4. The APD charges have been fully passed on to the passenger, the ETS charges will be passed on to the passengers to a certain extent.

The big difference between the APD and the EU ETS is that the APD is a standard rate per person per flight and is much higher than the predicted EU ETS charges. The EU ETS charges can vary from airline to airline, depending on its pass-through rate. However, it is good to keep in mind that the ETS charges will be paid on top of the constantly rising APD costs for flights taking off in the UK.³⁰⁵ Considering that London Heathrow Airport is the

cuts," *Breaking Travel News*(2011), <http://www.breakingtravelnews.com/news/article/british-airways-plans-to-cut-caribbean-routes/>.

³⁰³ Daily Mail, "Over-taxed: BA cuts flights to Caribbean over high APD rates," *Daily Mail*(2011), <http://www.dailymail.co.uk/travel/article-2039113/BA-cuts-flights-Caribbean-high-APD-tax-rates.html>.

³⁰⁴ Routes, "BA cuts flights to Caribbean over APD tax levels," online: (2011) <http://www.routesonline.com/news/34/travelmole/125928/ba-cuts-flights-to-caribbean-over-apd-tax-levels/>.

³⁰⁵ With exception of incoming international passengers with a layover shorter than 24 hours.

primary hub for British Airways, which serves a generous amount of Caribbean islands³⁰⁶, this will apply to all of their flights.

c. The economic impact of the EU ETS on Caribbean island states

After the UK APD resulted in the decline in tourist arrivals and the elimination of certain routes by British Airways, the Caribbean fears the impact of yet another ‘green tax’ on their economies. It is therefore important to determine whether the EU ETS will have a significant impact on both the tourism industry and the national economies of Caribbean island states.

However, not many economic impact assessments have either independently assessed the impact of the EU ETS on the Caribbean, or been able to separate the impact on the Caribbean from the North, Central or South American impact. As the impacts on small Caribbean island states are incomparable with big, landlocked countries, these “joint”-assessments shall not be considered in this thesis.

The economic impact of the EU ETS will vary per Caribbean island state according to the economic vulnerability and sensitivity of an island’s GDP in relation to changes in EU tourist arrivals and expenditures. In doing so, the Caribbean island states are dependent on the reaction of airlines to the impact of the EU ETS on their operations, and the subsequent response of passengers thereto.

As concluded in Chapter 3.3, even as it is expected that the EU ETS will increase air fares and decrease passenger demand, most airline impact assessment reports agree that the

³⁰⁶ British Airways serves direct flights to Antigua, Bahamas, Barbados, Bermuda, Cayman Islands, Dominican Republic, Grenada, Jamaica, St Kitts and Nevis, Puerto Rico, St Lucia, Trinidad & Tobago and the Turks & Caicos Islands.

EU ETS will not have a significant impact on air fares or passenger demand. Because of an insignificant decrease in passenger demand, it is unlikely for an airline to drop any routes unless demand has reduced in large enough amounts to reduce the number of flights on a route and make a route unprofitable. Furthermore, carbon leakage through artificial non-EU stops or relocation of EU hubs has also proven not to be a profitable option for airlines.

Accordingly, differences in tourist arrivals depend on, among other things, the increase in air fares due to the EU ETS, price elasticity on EU-Caribbean routes and global oil prices. In a 2010 study by Laurel Pentelow and Daniel Scott³⁰⁷, a range of values was used to represent the fluctuating prices of carbon and oil as well as price elasticity estimates. 4 ‘marker scenarios’ were used in order to project the impact on tourism arrivals. In comparison to the ‘Business as usual’ scenario, a decline in tourist arrivals through to 2020 of 1.3% to 4.3% was projected under Scenario A³⁰⁸ and Scenario B³⁰⁹. These declines are considered to be negligible. However, Scenario C, depicting a far more ambitious climate policy than A or B, showed a significant decline of 24%. Throughout the study, certain individual Caribbean island states, such as Barbados and the Bahamas, were found to be significantly more impacted than others, because of their high tourist-reliant GDP. Annual losses in visitor expenditures in the Caribbean region were also not significant under Scenario A (\$384 million in 2020). However, Scenario B (\$1.290 million in 2020) and Scenario C (\$7.144 million in 2020) indicated that a more rigorous climate change mitigation policy could indeed have a serious economic impact on Caribbean island states.

³⁰⁷ See Pentelow and Scott (2011), *supra* note 9 at 201.

³⁰⁸ The lowest impact on tourist arrivals using the current mitigation policy characteristics.

³⁰⁹ The highest impact on tourist arrivals using the current mitigation policy characteristics.

In a different 2012 study by Elodie Blanc and Niven Winchester³¹⁰, the proportional change in passenger arrivals is estimated as a function of the predicted airfare increase on both direct and indirect flights (dependent on allowances costs and pass-through rate³¹¹) and price elasticity of demand, and then multiplied by the EU market share to get the proportional change in total tourist arrivals. The increase in airfare ranged from 1.4% to 2.4% for direct flights and from 1% to 2.2% for indirect flights. Decreases in tourist arrivals from the EU are equally proportional to these changes in airfares. The decrease in total tourist arrival is, however, largest for Caribbean island states with big EU market shares, such as the Dutch-Caribbean island states (Bonaire, Curacao). Finally, this study found an average increase of airfares by 1.6% (\$19) and a decrease of total tourist arrivals of 0.35%. Antigua and Barbuda, Bonaire, Barbados and St. Lucia are predicted to have the largest negative economic impact because of their high tourist-reliant GDP.

In conclusion, in comparing the increase in airfare due to the EU ETS (\$19) to that of the UK APD (\$124), it is clear that the EU ETS shall be expected to have a moderate to insignificant impact on the economy of Caribbean island states under the current mitigation policy characteristics relative to, for example, other aviation related taxes or charges such as the UK APD.³¹²

However, a more stringent mitigation policy than the current EU ETS (such as Scenario C) could have a serious impact on the Caribbean economy as it would greatly decrease the visitor expenditures. Therefore, the Caribbean island states should remain vigilant of the further evolution of global climate change mitigation measures and their

³¹⁰ Élodie Blanc and Niven Winchester, "The Impact of the EU Emissions Trading System on Air Passenger Arrivals in the Caribbean," in *UCCI/UWI/ICCI Caribbean Conference: 50-50 Surveying the past, mapping the future* (University College of the Cayman Islands 2012).

³¹¹ A Full pass-through rate is assumed in this study.

³¹² See Blanc and Winchester, *supra* note 310 at 15.

subsequent impact on the Caribbean.³¹³ The implications of new policy regimes on tourism development should be understood in order to be able to negotiate for a special status or compensation for Caribbean island states that could be adversely affected by said regimes.³¹⁴

5. Solutions to issues related to the “unrevised” EU ETS

The current EU ETS is not anticipated to have a significantly detrimental impact on the Caribbean economy. However, any reduction in the numbers of tourist arrivals and expenditures is economically disadvantageous to the Caribbean island states.³¹⁵ Furthermore, the scheme is intended to gradually, but steadily, lower the cap on emissions, thereby driving up the price of allowances, which shall result in a further increase of airfares and, consequently, is expected to result in a further decrease in tourist arrivals and loss of tourist expenditures in the Caribbean. This evolution into a more stringent regime with a far more imposing climate mitigation policy is foreseen to have a far more detrimental impact on the economies of Caribbean island states than the current EU ETS. Therefore, in anticipation of the further development of the EU ETS into a more stringent scheme, and in trying to control its effects on the Caribbean economies, the following solutions are presented.

a. Revision of the EU ETS to include the CBDRRC principle

In order for the EU ETS to be in line with the purpose of the UNFCCC framework and the Kyoto Protocol, it should incorporate the principle of CBDRRC in the execution of

³¹³ Laurel Pentelow and Daniel J. Scott, "The Implications of Climate Change Mitigation Policy and Oil Price Volatility for Tourism Arrivals to the Caribbean," *Tourism and Hospitality Planning & Development* 7, no. 3 (2010) at 204.

³¹⁴ See Pentelow and Scott (2011), *supra* note 9 at 311.

³¹⁵ See Pentelow and Scott (2010), *supra* note 313 at 204.

its scheme. As discussed by Scott and Rajamani³¹⁶, the EU ETS is not in compliance with the principle of CBDRRC. However, this principle is essential to small island states as it grants protections to those countries that are vulnerable to either the long term effects of climate change or the short term effect of mitigation measures by other states. One way to include the CBDRRC principle into the EU ETS would be to exclude the emissions from flights departing from developing countries from the application of the scheme. Another way would be to differentiate between the historical and current responsibilities and respective capabilities of developed and developing countries with regard to the conditions for gaining exemption from the EU ETS based on their ‘equivalent to the EU’ climate change measures.

b. Re-including Small Island Developing States in CDM projects for the EU ETS

The European Commission has recently decided to exclude Small Island Developing States from being able to provide CERs to the EU ETS by participating in Clean Development Mechanism (CDM) projects. If Caribbean island states were to be able to participate in CDM projects, they could offset a portion of the lost revenue through a decline in tourist arrivals and expenditures by creating and selling carbon allowances within the scheme. Alternatively, if an equivalent of an EU ETS was to be instituted in the Caribbean (see Chapter 6.5(e)), the Caribbean island states could create their own CERs by having all island states participating in CDM projects. This way, the Caribbean island states would doubly benefit from their own Caribbean ETS.

³¹⁶ See Chapter 5.4 - Necessary revision for the EU ETS.

c. Create or contribute to an Adaptation Fund

In November 2001, the Kyoto Protocol Adaptation Fund was established based on article 12.8 of the Kyoto Protocol. 2% of the proceeds from CDM projects are used through the Kyoto Protocol Adaptation Fund to assist and finance concrete adaptation projects and programs in developing countries Parties that are particularly vulnerable to the adverse effects of climate change.³¹⁷

In a second proposal by Scott and Rajamani³¹⁸, an unrevised EU ETS could be compliant with the CBDRRC principle while treating all airlines and routes equally by allocating the revenues derived from flights departing from developing countries into the Kyoto Protocol Adaptation Fund, or a separate EU ETS Adaptation Fund, to help finance climate change mitigation and adaptation activities in developing countries.

A similar proposal was made by the Group of Least Developed Countries to impose an International Air Passenger Adaptation Levy (IAPAL), which constitutes of a small passenger charge of \$8 on each international roundtrip economy flight and \$40 on each international roundtrip business flight.³¹⁹ This way, the fund would be anticipated to raise approximately \$8 to \$10 billion annually, to ensure adequate financing for developing country adaptation costs.³²⁰ After a comparison of these additional charges on international tourist arrivals to the current increase resulting from the EU ETS, it has been concluded that, like the current EU ETS policy, the IAPAL would not have a significant impact on tourist arrivals.

³¹⁷ UNFCCC, "The Kyoto Protocol Adaptation Fund," online:

http://unfccc.int/cooperation_and_support/financial_mechanism/adaptation_fund/items/3659.php.

³¹⁸ See Scott and Rajamani, *supra* note 3.

³¹⁹ Maldives, "A proposal by the Maldives on behalf of the Group of Least Developed Countries (LDCs): International Air Passenger Adaptation Levy," online: (2008)
http://unfccc.int/files/kyoto_protocol/application/pdf/maldivesadaptation131208.pdf.

³²⁰ See Pentelov and Scott (2011), *supra* note 9 at 200.

d. All Caribbean island states should become party to the UNFCCC and Kyoto Protocol

As only half of the Caribbean island states are currently party to the UNFCCC and Kyoto Protocol, their voices are not fully heard with regard to the negative impacts of short term climate change mitigation measures such as the EU ETS on their island states. Given their economic sensitivity to climate change mitigation measures, Caribbean island states have different issues and priorities which should be addressed by these treaties. However, in order to address these issues, the Caribbean island states must first become Parties to these treaties, organize their issues and concerns through a regional group such as the Caribbean Community Climate Change Center (CCCCC) and raise their voices through the appropriate channels. Additionally, the non-Party Caribbean island states cannot rely on the safeguards and protections provided by the UNFCCC and Kyoto Protocol, as these only apply to State Parties. These safeguards include that State Parties have to take the principle of CBDRRC into account in the execution of their UNFCCC commitments with other State Parties. Furthermore, Caribbean island states that are Party to the UNFCCC and Kyoto Protocol and are vulnerable to the adverse effects of climate change can request assistance through the Kyoto Protocol Adaptation Fund.

e. Create a regional Caribbean ETS

If the EU ETS remains unchallenged and unrevised, and the EU ETS allowance revenues are not adequately earmarked for the assistance to vulnerable developing countries or global climate change mitigation purposes, the Caribbean will have to look into other ways of improving their situation. By creating a regional Caribbean ETS, the Caribbean

island states can combine the benefits of being exempted from the EU ETS and the creation and contribution to a new Caribbean Adaptation Fund with being independent of the application of other carbon emission schemes that are not compatible with, among other things, the structure, culture, development and sensitivity of the tourist industry of the Caribbean.

A great majority of Caribbean island states are classified by the UN as Small Island Developing States, and would be considered developing countries by the UNFCCC. The historical carbon emission levels of the Caribbean are also very low. Due to relatively low carbon emissions in the Caribbean region, the carbon caps can also be kept at a level representative of the development of a region of developing countries. Therefore, an emissions trading scheme for the Caribbean should be created on the basis of the Caribbean island states' historical and current carbon emissions, and their respective capabilities as developing countries. This Caribbean ETS must not hinder economic development within the region, but should promote sustainable growth and further encourage the community to invest in the Caribbean's adaptive capacity to climate change. The Caribbean ETS does not have to be equal to the EU ETS; the Caribbean ETS should be equivalent based on the CBNDRRC principle.

An example of the promotion of sustainable growth is the proposal for the establishment of a 'Single Caribbean Airspace', as brought forward by the Caribbean Aviation Safety and Security Oversight System in 2011.³²¹ Like the Single European Sky, it intends to "reduce fragmentation and complexity, increase air traffic control capacity, reduce delays, facilitate introduction of new technology and increase harmonization and

³²¹ Caribbean Aviation Safety and Security Oversight System, "Feasibility of the establishment of a "Single Airspace" within the Caribbean," online: (2011) <http://www.onecaribbean.org/content/files/SingleCaricomAirspaceJune2011.pdf>.

cooperation”.³²² Such an important project to the aviation and tourism industry of the Caribbean could, in turn, be financed by the revenues from the Caribbean ETS.

With regard to the international aviation aspect of the Caribbean ETS, the scheme would retain the revenue from carbon emission allowances to aviation within the Caribbean, as it would otherwise flow into the EU.³²³ That way, this revenue can be redistributed and used in improvement of airport infrastructure and technology according to the needs of the Caribbean island states, without interference or dependency on third parties.

f. The most direct and controllable solution to the Caribbean island states

In order not to be dependent on a timely revision of the EU ETS or climate change related decisions of the EU or other third countries, the most direct and controllable solution to the Caribbean island states should include that (1) the 15 remaining non-Party Caribbean island states become party to the UNFCCC and Kyoto Protocol in order to be able to rely on the safeguards and protections provided by these treaties, and (2) all Caribbean island states work together to create a regional Caribbean ETS in compliance with the UNFCCC, Kyoto Protocol and the CBDRRC principle so as to also satisfy the EU ETS’ conditions for exemption. This way, the Caribbean island states can create a stronger and more independent position for themselves within the global climate change framework of the UNFCCC.

³²² Whether this Single Caribbean Airspace initiative will also significantly lower aviation carbon emissions is not discussed in the proposal.

³²³ See Overseas Development Institute, *supra* note 291 at 3.

Chapter 7 – Conclusion

After, first off, determining the deficiencies in the EU ETS relevant to developing states as compared to the UNFCCC and Kyoto Protocol, secondly, analyzing the legal and economic impact of the inclusion of aviation into the EU ETS on airlines worldwide and furthermore examining the effect this impact will have on Caribbean island states and, finally, providing solutions for Caribbean island states to the issues arising from the inclusion of aviation into the EU ETS, this thesis has attempted to determine what the impact of the EU ETS will be on Caribbean island states and, additionally, how these Caribbean island states can deal with the issues that are expected to arise from the inclusion of aviation into the EU ETS.

The EU ETS should be, but is not, compliant with the ‘common but differentiated responsibilities and respective capabilities’ principle (the CBDRRC principle) of the UNFCCC. This deficiency is extremely relevant to Caribbean island states as their ‘differentiated responsibilities’ for historical emissions and ‘respective capabilities’ for the reduction of current emissions are significantly lower than those of the EU ETS. In the execution of its UNFCCC commitments, the EU has not given the proper consideration to the adverse effects of the short term economic impact of the implementation of its policies and measures, such as the EU ETS, on small island countries such as Caribbean island states, as per article 3 of the UNFCCC.

The legal impact of the EU ETS on the worldwide airline industry is that the emissions from the entire flight departing from or arriving in an EU airport shall be covered by the EU ETS, unless excluded by the *de minimis* rule. This results in an increase of the overall administrative burden for airlines as they have to monitor, report and verify their

emissions as well as surrender the equivalent number of allowances for their annual emissions to their responsible EU Member State.

The economic impact on airlines is that there will be an increase in airfares, depending on the pass-through rate behavior of airlines, which may in turn affect passenger demand. This pass-through rate can mean the difference between airlines reaping windfall profits, being 'revenue neutral' or suffering losses due to the EU ETS. However, because of the range of assumption parameters, methods and pass-through scenarios, there is no consensus on the exact increase in airfares. Nevertheless, the EU ETS is estimated not to have a significant impact on passenger demand as compared to such other costs as fuel surcharges or air passenger duties.

It is expected that the impact of the EU ETS to the economies of Caribbean island states will be moderate to insignificant under its current mitigation policy characteristics. However, a more stringent mitigation policy could have a serious impact on the Caribbean economy as it is expected to greatly decrease tourist expenditures. The Caribbean island states most vulnerable to these changes in tourist arrivals and expenditures are those with a high tourist-reliant GDP in combination with the EU representing a large market share of their tourism industry. Therefore, the Caribbean island states should remain vigilant of the further evolution of global climate change mitigation measures and their subsequent impact on the Caribbean.

Finally, although the current EU ETS is not anticipated to have a significantly detrimental impact on the Caribbean economy, any reduction in the numbers of tourist arrivals and expenditures is economically disadvantageous to the Caribbean island states. Therefore, in order to be less dependent from the further development of the EU ETS or any

other third country climate change mitigation measures, Caribbean island states should create a stronger and more independent position for themselves within the global climate change framework of the UNFCCC by having all 31 Caribbean island states become party to the UNFCCC and Kyoto Protocol and by working together to create a regional Caribbean ETS.

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