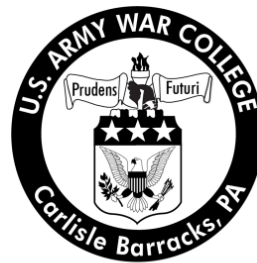


The EU Emissions Trading Scheme: A Challenge to U.S. Sovereignty

by

Colonel Harold M. Hinton
United States Army Reserve



United States Army War College
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by

Colonel Harold M. Hinton
United States Army Reserve

Colonel Charles W. Van Bebber
Project Adviser

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U.S. Army War College
CARLISLE BARRACKS, PENNSYLVANIA 17013

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The European Union's Emissions Trading Scheme is the cornerstone of the EU's efforts to reduce greenhouse gas emissions in accordance with the Kyoto Protocol to the United Nations Framework Convention on Climate Change. In January 2012, Brussels unilaterally imposed the scheme on U.S. and international civil aircraft operators departing from or arriving in the EU. As a result of the current method being used to compute emissions, U.S. civil aircraft operators would be subject to EU regulation on all segments of an international flight, including that portion which occurs over U.S. or international airspace. This is a challenge to the sovereignty of the United States and is a threat to its national interests. This paper reviews the background of the EU's Emissions Trading Scheme and its application to civil aviation, examines the current legislative and legal proceedings regarding the scheme, and outlines the U.S. and international objections to the legislation. A recommended strategic policy is proposed which addresses U.S. policymaker's concerns over sovereignty issues, EU environmental policy, and international law.

THE EU EMISSIONS TRADING SCHEME: A CHALLENGE TO U.S. SOVEREIGNTY

The European Union (EU) has long been considered a global leader in environmental protection. It ratified the Kyoto Protocol to the United Nations Framework Convention on Climate Change (UNFCCC), and has continued to aggressively enact legislation to meet its future climate change strategy.¹ The regulatory and financial burdens caused by this environmental protection strategy have generally remained localized within the EU community. However, Brussels' unilateral implementation of its Emissions Trading Scheme (ETS) on civil aircraft operators has resulted in a challenge to U.S. sovereignty which could ultimately affect our economic and diplomatic national interests and, if allowed to escalate, our national security.

The application of the EU ETS to civil aviation is a contentious issue. It has been derided by U.S. policymakers as an unfair tax while simultaneously praised by EU policymakers as a cornerstone of environmental policy. The conflict this issue has caused among nations has the potential to spiral into a major trade war involving the U.S. and several of its closest allies. A solution to this volatile issue is possible through multilateral negotiations. In this paper, I propose a strategic policy option that addresses the sovereignty, economic, and environmental concerns of both Washington and Brussels. In order to frame the operational environment and define the problem, I briefly review the origin of the EU ETS and outline the sovereignty and international law objections raised by the United States and its international partners. I then provide an update on the status of legislation proposed by U.S. policymakers in response to the scheme and its inclusion of civil aircraft. After framing the environment and defining the problem, I propose a strategic response focused on multilateral negotiations and

analyze the advantages and potential risks of the recommended approach. In order to be successful, any strategic option must fairly address the contentious issues defining the problem and resolve them in a manner that is feasible, acceptable, and suitable to all stakeholders. The solution I propose meets those requirements, satisfying the concerns of Washington and Brussels.

The Kyoto Protocol and Origin of the EU ETS

The Kyoto Protocol to the UNFCCC was adopted in Kyoto, Japan in 1997 and became effective in February 2005. An international agreement, it established benchmarks for the reduction of greenhouse gases (GHG) for the EU and thirty-seven other industrialized nations.² These reductions were based on 1990 emissions levels, with the monitoring period taking place over the five-year commitment period of 2008 through 2012. The GHG reduction benchmarks averaged five percent, although the benchmarks ranged widely from an eight percent reduction for the EU to a ten percent increase in GHG emissions allowance for Iceland.³ In accordance with the Kyoto Protocol, countries with a reduction goal strive to reduce their emissions primarily through national measures and various market-based mechanisms; these mechanisms included emissions trading, clean development mechanism (CDM) and joint implementation.⁴

Article 17 of the Kyoto Protocol authorizes ratifying nations to use emissions trading to meet their GHG reduction commitments.⁵ The emissions trading scheme that Brussels adopted is a “cap-and-trade” system based in principle on the emissions trading scheme Washington adopted to reduce sulfur dioxide in accordance with the Clean Air Act of 1990.⁶ Although heavily involved in the negotiations in Kyoto, the

United States did not ratify the Kyoto Protocol. President George W. Bush voiced his displeasure over the agreement, arguing against the unfairness of Chinese and Indian exemptions. He also decried the potential increase in domestic electricity costs due to the regulation of carbon dioxide emissions on utilities switching from coal to natural gas.⁷ Conversely, the EU adopted the ETS as a cornerstone of their of GHG reduction efforts. Ellerman and Buchner noted the irony of Kyoto in their review of the origins of the EU ETS, stating, "...emissions trading is an American institutional innovation in environmental regulation that was forced into the negotiations on the Kyoto Protocol by the United States in late 1997 in the face of strong opposition from the EU."⁸

The EU ETS, which became effective on October 13, 2003, is currently the world's largest GHG emissions trading scheme and is the central policy instrument for the Union to meet its Kyoto Protocol goals.⁹ Mandated by European Council (EC) Directive 2003/87/EC, the scheme regulates over 10,000 fixed facilities across the twenty-seven EU member states. These facilities include heavy GHG emitters such as utilities and large industrial plants as well as smaller factories.¹⁰ The Directive did not apply to any transportation sector sources of GHG, however that would change five years later.

Inclusion of Aviation into the EU ETS

On October 24, 2008, the EC expanded the scope of the EU ETS by amending Directive 2003/87/EC. The new legislation, Directive 2008/101/EC, authorized the inclusion of aviation activities into the EU ETS beginning on January 1, 2011 for intra-EU flights (domestic) and January 1, 2012 for all international flights. The objective of the amendment was to "...reduce the climate change impact attributable to aviation

activities in the Community scheme.”¹¹ Directive 2008/101/EC applies to most large civilian aircraft that arrive or depart from EU aerodromes. It allows exceptions for aircraft performing state, military, emergency services or training functions. The Directive also grants exemptions to commercial aircraft with a certified maximum take-off weight of less than 5700 kilograms (12,540 pounds) and commercial operators with flight frequencies below a prescribed threshold.¹² All U.S. commercial aircraft and private business aircraft that arrive at or depart from an EU aerodrome are subject to the requirements of the trading scheme.

For the reporting year 2012, U.S. and international civil aviation CO₂ emissions will be capped at ninety-seven percent of the historical CO₂ emissions as measured over the period 2004-2006. In years 2013 to 2020, the cap is reduced to ninety-five percent of the historical average. This cap on emissions allowances forms the baseline for computation of the allocated emission credits.¹³ Civil aircraft operators must obtain fifteen percent of their credits on the open market at their own expense in the first year. They will be granted emission credits from the EU to account for the remaining eighty-five percent of the cap. In 2013, the civil aircraft operator’s credits would be lowered to eighty-two percent of the baseline and they would be responsible for obtaining the remaining eighteen percent. The amount of free allowances is expected to decrease with a goal of no free credits by 2020, requiring airlines to purchase one hundred percent of their emissions credits.¹⁴

Each civil aircraft operator is assigned an EU member state that acts as the administrator for the operator’s ETS requirements. This is usually the state in which a carrier conducts the greatest number of arrival and departures.¹⁵ For example, the vast

majority of U.S. commercial carriers have been assigned to the United Kingdom. Shortly after the end of the calendar year, aircraft operators must surrender allowances equivalent to their total emissions during the preceding the year. The aircraft operator will be required to purchase additional allowances at auction or on the open market if their emissions exceed the number of free allowances.¹⁶ If for any reason, an operator does not acquire enough emission credits, it will be required to pay an excess emissions penalty of one hundred euros per metric ton of emissions. The operator will also be required to make up the shortfall in the following year.¹⁷

The estimated cost of the EU ETS to U.S. civil aircraft operators varies based on assumptions for future carbon credit markets. In Congressional testimony in late 2011, the airline lobbyist group, Airlines for America (formerly the Air Transport Association of America) placed the figure at approximately \$3.1 billion through the year 2020.¹⁸ However, a recent Massachusetts Institute of Technology (MIT) study concluded that the EU ETS could result in a substantial profit to U.S. airlines, as much as \$2.6 billion.¹⁹ When all American civil aircraft operators are taken into account, including business aircraft operators, the actual cost is likely somewhere in between the two figures.

The aviation sector is the only transportation source currently subject to the ETS. The Intergovernmental Panel on Climate Change (IPCC) estimated worldwide aviation contributes only two percent of global CO₂ emissions. As a frame of reference, the transportation sector accounts for approximately twenty percent of global CO₂ emissions and the aviation sector contributes thirteen percent of the total transportation CO₂ emissions amount. Road transportation contributes the vast majority of CO₂ emissions within the transportation sector, approximately seventy-four percent.²⁰

Brussels currently has no plans to subject ground transportation to the ETS, although there is pending legislation to allow EU member states to increase toll charges on heavy trucks to counter their large contributions to air and noise pollution. The Eurovignette Directive, which originally authorized inter-EU tolls on heavy loads for infrastructure sustainment, would allow for a twenty to thirty percent increase in tolls to offset the costs of the pollution if the legislation is adopted.²¹

U.S. Objections to EU ETS

The reasons for subjecting civil aviation to the ETS, whether they are political in nature or a logical cornerstone of environmental policy are debatable. However, the computational methodology for the scheme's application to U.S. and international civil aircraft operator's flights is clear; this is the primary challenge to American sovereignty and the first U.S. objection to the scheme. The formula Brussels adopted to compute an aircraft's CO₂ emissions takes into account the amount of fuel an aircraft burns for the duration of the flight. As a result, the computation is not limited to the emissions generated solely in EU airspace. Rather, in accordance with Directive 2008/101/EC, if an international flight departs from or arrives at an EU aerodrome, the emissions are calculated along the entire route of the flight.²²

An example of the scheme's application to a typical U.S. airline international flight is the following: A flight departs San Francisco with a destination of London. At the San Francisco airport, the pilots would start the auxiliary power unit (APU) on the aircraft in order to apply electrical power and conditioned air to the aircraft during passenger boarding. The APU burns fuel from the aircraft's fuel tanks; therefore its start initiates emissions computation for ETS purposes. The pilots then start the engines, taxi to the

departure runway and depart from San Francisco. The emissions summation continues over American airspace, Canadian airspace, and international waters before the aircraft enters EU airspace off the coast of the British Isles. Although only nine percent of the flight actually took place over EU airspace, one hundred percent of the flight--including time on the ground in the United States--is subject to emissions computation.²³

In a lawsuit filed on behalf of U.S. airlines against the EU, Airlines for America argued the EU ETS as applied to aviation has an “extra-territorial effect,” making it illegal under international law. The organization adamantly declared:

Such regulation by the EU of third country airlines in third country airspace is contrary to a fundamental principle of customary international law. The principle that a state has complete and exclusive sovereignty over its airspace. This principle is reflected in various international conventions and agreements, such as the Chicago Convention.²⁴

Representative Jerry Costello (D-IL) accused Brussels of embarking on a “...go it alone approach,” stating that the ETS is contrary to international law and violates U.S. sovereignty because of the charge for emissions “...even over our own airspace.”²⁵

Washington’s second objection to the scheme is the unilateral nature in which Brussels implemented Directive 2008/101/EC. American policymakers and stakeholders, as well as other non-EU stakeholders argue that legislation over aviation matters as applied outside a state’s sovereign territory must be agreed upon by a consensus within those sovereign states. That legislation must occur within the framework of the Convention on International Civil Aviation, known as the Chicago Convention. Negotiated in 1944, the Chicago Convention defines international standards on airspace, aviation sovereignty, and general aviation procedures.²⁶ The International Civil Aviation Organization (ICAO) was formed during the Chicago Convention and is the United Nation’s (UN) agency tasked with regulating international

aviation. There are 191 UN states that are members of ICAO, including all the individual EU member states.²⁷ However, the EU as a collective body is not a member of ICAO.

On September 30, 2011, representatives from twenty-one ICAO nations met in New Delhi, India, to voice their objections to the EU ETS.²⁸ They collectively adopted a Joint Declaration calling on ICAO to oppose the ETS, noting its unilateral application is “...inconsistent with applicable international law.”²⁹ However, in its December 2011 ruling in response to the Airlines for America lawsuit, the European Court of Justice (ECJ) upheld the authority of the EU to implement Directive 2008/101/EC. The ECJ found that the EU is not bound by the Chicago Convention, even though its individual member states are.³⁰ Additionally, the Court ruled in Brussels’ favor in the question of whether or not the ETS violates international law, upholding the validity of Directive 2008/101/EC.³¹

The third U.S. objection to the EU ETS concerns the use of revenue collected by the Union’s member states. Directive 2008/101/EC *recommends* the revenue be used to address climate change issues in the EU and other countries.³² However, this is only a recommendation and there is concern within Washington that the revenues will be used to fund European operations unrelated to climate change, especially given the tenuous nature of current European financial markets. In his July 2011 comments as the Chairman of the Aviation Subcommittee to the House Transportation and Infrastructure Committee, Representative Thomas Petri (R-WI) remarked on the lack of transparency for the use of ETS revenues by EU member states. Because the EC has not clearly mandated the use of the revenue, he stated “Some EU member states intend to use the

funds for whatever they want, as opposed to investing in research and development efforts with the goal of reducing carbon dioxide production by the civil aviation sector.”³³

European Union officials have an opposing view, arguing there is no transparency issue. As matter of proof, they have noted the requirement for EU member states to publicly declare the intended use of their ETS revenue. The language within Directive 2008/101/EC appears to confirm this argument, stating, “Member States shall inform the Commission of actions taken pursuant to this [intended use of revenue] paragraph.”³⁴ Officials insist there would be too much pressure on the member states to use the revenue for its intended environmental purpose. In fact, EU officials note this is revolutionary as it is only the second time in its history that the EU has directed the specific use of revenue.³⁵

Current U.S. Diplomatic and Legislative Actions

In June 2011, representatives of the U.S. government presented their formal objection to the inclusion of civil aviation in the EU ETS at the semi-annual meeting of the U.S.-EU Joint Committee created under the 2007 Air Transport Agreement, commonly referred to as the “Open Skies” agreement. The representatives specifically objected to subjecting U.S. operators to the EU ETS without the agreement of the U.S. Government. This objection included the requirements for monitoring, reporting, and verifying emissions.³⁶ Mr. Kevin Welsh, the Senior International Advisor on Environment and Energy with the FAA, highlighted the extra administrative costs borne by the civil aviation industry as a result of the tedious monitoring and reporting requirements. These costs were incurred well ahead of the formal January 1, 2012 start date in order to have the administrative processes in place.³⁷

On October 24, 2011, the U.S. House of Representatives passed House Resolution 2594, the *European Union Emissions Trading Scheme Prohibition Act of 2011*, without amendment. This resolution directs the Secretary of Transportation to prohibit an operator of a U.S. civil aircraft from participating in any emissions trading scheme unilaterally established by the EU. Additionally, the resolution authorizes the Secretary of Transportation, the Administrator of the FAA, and other “appropriate government officials” to conduct international negotiations and take other actions necessary to ensure U.S. civil aircraft operators are held harmless from any such scheme.³⁸ The ease with which the resolution passed the House of Representatives was predictable, according to EU officials. It addressed three issues that are politically safe for the U.S. Government to oppose: taxes, the EU, and the environment. Additionally, there are many in the EU Parliament who think the airlines got a great deal in regards to the EU ETS.³⁹

The U.S. Senate has not passed any EU ETS legislation, although there is action on a proposal similar in nature to H.R. 2594. Senator John Thune (R-S.D.) has filed a bill in his capacity as the ranking member of the Senate’s Aviation Operations, Safety, and Security Subcommittee. In contrast to the sharp, directive language contained in H.R. 2594, the language in his bill appears to be more permissive in nature. The current language of the bill would prohibit compliance with the EU ETS if it were in the national interest of the United States.⁴⁰ Intentionally vague, this permissive language would give Washington the diplomatic flexibility to open the way for constructive negotiations with Brussels. However, the chances of passing this legislation are in doubt due to Democratic Party resistance. Thune’s Legislative Counsel Adrian Arnakis noted that two

influential Democrats, Senators John Kerry (D-MA.) and Barbara Boxer (D-CA.), are opposed to the bill. Kerry, the head of the Senate Foreign Relations Committee, is resistant based on his fear of harming international relations with the EU. Boxer, who chairs the Senate Committee on Environment and Public Works, is against the bill based on her pro-environment and pro-cap-and-trade stance.⁴¹

Brussels obviously disagrees with any legislation prohibiting civil aircraft operators from participating in the EU ETS. From their viewpoint, the latest ECJ ruling on the Airlines for America lawsuit upholds the validity of the Scheme. The ruling also confirms Brussels' legal right to impose the legislation on international civil aviation. To that end, the European Commission has publicly stated that any civil aircraft operator that does not follow the EU ETS is subject to a ban from European airports.

International Escalation

The EU ETS is not exclusively a bilateral issue between the United States and the EU. As noted earlier in reference to the joint declaration from ICAO, there is sharp international disagreement with the Scheme. China, among other nations, has expressed concern over the unilateral nature of the EU legislation and has publicly stated a desire to see a negotiated solution. China will have significant economic and diplomatic leverage in the increasing dispute for several reasons. First, a large number of Asian tourists are regularly carried to EU nations by Chinese state-owned airlines. A significant disruption of these flights would "...hurt Europe's travel industry when the continent is struggling with a debt crisis and high unemployment."⁴² Second, China is a large buyer of Airbus Industries' aircraft, which are manufactured in several European nations. As a result of an escalating trade dispute, China could feasibly cancel its orders

for the European aircraft and instead, turn to the U.S.-based manufacturer Boeing as an exclusive supplier for its future large aircraft orders.⁴³ Finally, with the increasing economic challenges throughout Europe, China may be called on by the EU and international financial institutions to provide economic assistance. If China balks at assistance because of an ongoing trade dispute, this would only serve to heighten European economic concerns and possibly damage economic recovery efforts.

The EU ETS dispute is becoming increasingly volatile and has the potential to escalate rapidly. The ratings agency Fitch has warned "...the [EU ETS] conflict could spiral into a global trade dispute."⁴⁴ With the potential to disrupt trade and severely impact the economic interests of the world's nations, a conflict with the EU over the ETS could very well escalate into a global crisis, affecting not only U.S. economic interests, but its security interests as well. In his report to Congress, an industry and trade specialist with the Congressional Research Service clearly delineated the interrelationship between economic influences and national security:

National security depends also on soft power, the ability of a country to generate and use its economic power and to project its national values. This, in turn, depends on long-term factors that contribute to economic growth and increase the total resource base available not only for defense but to provide economic security in the form of income and business opportunities for individuals...In addition, the increased integration of the U.S. economy into global markets means that U.S. security also depends on global economic stability, on a balanced international economy, the ability to coordinate key economic policies with other leading nations ...⁴⁵

If Washington is unable to coordinate its economic policies with one of its strongest military and economic allies, this may well result in increased risk to national security. In light of this possibility, a recommended policy option is proposed.

Flight Plan for Compromise

In order to satisfy feasibility, acceptability, and suitability criteria, multilateral negotiations between Brussels and the nations opposing the EU ETS are the most logical approach to this issue. These negotiations would be conducted under ICAO leadership. This option does not seek to eliminate civil aviation inclusion in the EU ETS. Rather, it would be an attempt to modify the legislation to address the interests of all stakeholders. Directive 2008/101/EC required international civil aircraft operators to monitor and report their emissions amounts beginning January 1, 2012. However, they will not be required to relinquish their 2012 emissions credits until the end of April 2013.⁴⁶ This sixteen-month delay between the initiation of the program and the point at which credits are exchanged is an adequate amount of time for a negotiated settlement.

The negotiations must address U.S. sovereignty and international law concerns, global environmental interests, and the economic interests of all stakeholders. In order to satisfy U.S. national interests, these multilateral negotiations should focus on three primary objectives: (1) modifying the current computational methodology for emissions to apply to EU airspace only; (2) applying the equivalent measures section of Directive 2008/101/EC to both government-sponsored and industry emission reduction initiatives; (3) mandating the use of any international aviation-derived ETS revenue.

First, there must be a compromise on the methodology for computing aircraft emissions in sovereign or international, non-EU airspace. Despite the December 2011 ruling from the ECJ upholding its validity, the sovereignty issue is the primary concern to American and international policymakers. The most logical modification to the computational methodology would entail focusing only on an aircraft's emissions while

in EU airspace and disregarding the emissions in sovereign or international airspace. This modification would require both a recalculation of emissions in the current year as well as a recalculation of the 2004-2006 average emissions used to issue this year's carbon credits.

This change would address the sovereignty issue associated with the ETS, but it would require major EU compromise, since the modification would effectively eliminate a large percentage of aviation emissions from consideration in the program. In order to address EU and global environmental objectives, an additional modification to the ETS calculation is recommended. This modification should be an amendment to the legislation that subjects *all* international civil aircraft flying within EU airspace to the Scheme, *regardless of their departure or arrival airport*. In other words, all civil aircraft meeting the weight and specified use criteria outlined in Directive 2008/101/EC departing from, arriving at, or transiting EU airspace should be subject to the ETS. Adding transiting aircraft to the program recaptures a significant amount of emissions lost due to the exclusion of EU extra-territorial and international flying. Additionally, this modification contributes to Brussels' environmental objectives without provoking sovereignty concerns of non-EU nations. In order to amend the Directive to include transiting aircraft, Brussels would have to relax the "hook" provision assumed in the Directive. The hook is the EU aerodrome from which a flight begins or at which a flight terminates, making it eligible for inclusion in the ETS. If the Directive were modified as recommended, there would be no further requirement for this hook provision.

The second objective of multilateral negotiations should be to amend the equivalent measures section of Directive 2008/101/EC to recognize industry investment

in green technologies and alternative government-sponsored environmental initiatives.

The equivalent measures section of the Directive states:

If a third country adopts measures, which have an environmental effect at least equivalent to that of this Directive, to reduce the climate impact of flights to the Community, the Commission should consider the options available in order to provide for optimal interaction between the Community scheme and that country's measures, after consulting with that country.⁴⁷

The original intent of this section was to serve as a “linkage” to a third country’s GHG mitigation system. Initially, the Directive only subjected civil aircraft arriving at an EU aerodrome to the ETS. Departing civil aircraft would be subject to the system in effect in their country of origin.⁴⁸ In fact, a cap-and-trade system for GHG reduction was under discussion among U.S. policymakers at the same time Directive 2008/101/EC was negotiated. The American Clean Energy and Security Act of 2009 was a cap-and-trade system much like the EU ETS that sought to limit GHG emissions in the United States.⁴⁹ It passed in the House of Representatives but failed to reach a vote in the Senate and was effectively dropped from consideration.⁵⁰ Ultimately, Brussels included both arriving and departing flights in the scheme due to the lack of other state-sponsored GHG reduction systems with which it could link.

An agreement to apply these equivalent measures to the aviation industry as well as to government-sponsored efficiency initiatives would recognize the sizeable investment already underway in such technologies. These industry advances include new fuel-efficient airplanes and engines, increased use of biofuels, and fuel-conserving winglets.⁵¹ The technological improvements are not insignificant. The IPCC assumed that advances in aircraft technology and the introduction of new aircraft would increase fuel efficiency by forty to fifty percent between 1997 and 2050.⁵² State-sponsored

efficiency initiatives include the FAA's Next Generation Air Transportation System (NextGen), an expensive, technologically advanced navigation system. NextGen is designed to optimize routing within U.S. airspace, resulting in environmental benefits through decreased fuel consumption and corresponding emissions reduction. The key features of NextGen that result in these reductions include satellite-based navigation and the use of continuous descent approaches to the landing airport.⁵³

The third objective of negotiations should be an agreement to clearly mandate the use of any ETS revenue collected by EU member states from international civil aviation sources. Currently, Article 3d of Directive 2008/101/EC states the following concerning ETS revenue:

It shall be for Member States to determine the use to be made of revenues generated from the auctioning of allowances. Those revenues *should* [emphasis added] be used to tackle climate change in the EU and third countries, inter alia, to reduce greenhouse gas emissions, to adapt to the impacts of climate change in the EU and third countries, especially developing countries, to fund research and development for mitigation and adaptation, including in particular in the fields of aeronautics and air transport, to reduce emissions through low-emission transport and to cover the cost of administering the Community scheme...⁵⁴

This objective can be achieved through two means. First, the EU should change the language in the Directive, substituting "shall" for "should" in the relevant passage and penalize any state that fails to abide by this requirement. Mandating the use of international aviation-derived ETS revenues for climate change purposes only would alleviate U.S. policymakers' concerns of supplementing Europe's general-purpose coffers on the backs of American business. Second, Brussels should continue the mandatory reporting requirement for the use of these revenues, allowing for global transparency. If any state fails to use the revenues for climate change initiatives, the

European Commission should publicly declare the penalties imposed on the offending state, reinforcing the revenue-use transparency.

Advantages

There are three distinct advantages to pursuing multilateral, ICAO-led negotiations with the aforementioned objectives. First, the concerns of each stakeholder are addressed equally. The ETS, in its modified state, would remain a powerful incentive for the civil aviation industry to reduce emissions. The addition of transiting aircraft to the scheme would aggressively address EU environmental concerns. Limiting the calculation of emissions to EU-airspace only would alleviate U.S. and international sovereignty issues. The revenue-use language modification to the Directive would address the concerns of all stakeholders.

The second advantage to this approach is that the negotiations would leverage the formidable diplomatic, economic, and informational influences of a worldwide coalition opposing the EU ETS legislation. The United States, China, Russia, and India, each having publicly stated their opposition to the scheme, are among the most influential of this coalition. Any retaliatory action by one or more members of the coalition--potentially including a curtailment of passenger flights, withdrawal of economic assistance, or cancelling orders for durable goods--would have a great impact on the EU. Although Brussels may be inclined to challenge each nation individually, its willingness to stand opposed against all of them may be a far different matter.

The third advantage of this option lies within the international organization that will lead the negotiations. Since ICAO is a neutral UN organization and all EU member states are members of ICAO, the legitimacy of this approach is enhanced. There will not

be a European perception that Washington is pursuing this option to satisfy its national interests at the expense of all others. Additionally, there is regulatory guidance within the Kyoto Protocol that mandates all agreeing parties work through ICAO in order to pursue aviation emissions reductions. Specifically, Article II of the Kyoto Protocol states, “The Parties...shall pursue limitation or reduction of emissions of greenhouse gases not controlled by the Montreal Protocol from aviation...working through the International Civil Aviation Organization....”⁵⁵ Since the ETS was Brussels’ mechanism to meet Kyoto Protocol benchmarks, the requirement to work through ICAO to negotiate these aviation emissions reduction initiatives remains valid. European Union officials contend they were forced to act on aviation emissions because ICAO failed to do so in fifteen years of discussions on the topic.⁵⁶ This option serves as a forcing function for ICAO to act on aviation emissions. It also leverages ICAO momentum resulting from the September 2011 meeting of nations opposing the ETS.

There is a historic precedent for successfully negotiating an agreement to an aviation dispute between the United States and the EU. In 2000, Brussels unilaterally implemented a regulation that limited the operation of “hushkitted” aircraft in EU airspace. These were aircraft that had older engines with after-market modifications to meet noise reduction standards. In an attempt to control aircraft noise, EU lawmakers initially sought to apply noise reduction standards across the board on all aircraft within EU airspace. The resulting costs of the proposed legislation were deemed too great for European airlines. Bowing to domestic pressure, Brussels passed legislation that affected mainly hushkitted aircraft. Since American manufacturers made almost all of these aircraft and technologies, the economic impact was born almost entirely by the

U.S. aviation industry. The United States filed a motion with ICAO seeking relief and participated in ICAO-mediated negotiations with the EU. In 2002, the Brussels agreed to modify its noise legislation and Washington withdrew its complaint.⁵⁷

Risks

There are several risks associated with the proposed policy. First, Brussels may choose not to negotiate with ICAO. As stated previously, the EU is not a member of ICAO. The December 2011 ruling of the ECJ further concluded that the EU is not subject to the Chicago Convention. Armed with the rule of law and its moral conviction to global environmental efforts, Brussels may choose to press forward with ETS in its present form.

The second risk to this approach is the possibility of an ineffective ICAO. Even if Brussels agrees to multilateral negotiations with ICAO as the lead agency, the ICAO membership may encounter extreme difficulty in reaching a consensus on the negotiating objectives. Each of the ETS-opposing nations has different interests and, as history has proven, these diverging interests may make agreement impossible. Brussels' complaint that ICAO discussed aviation emissions reduction for over fifteen years with no consensus bears this out. Additionally, if a consensus is reached within ICAO on the negotiating objectives, it may result in a dilution of U.S. negotiating objectives.

The third risk to this approach is contrary to the entire premise of a negotiated settlement. A negotiated compromise may cost U.S. airlines far more than allowing the EU ETS to take effect with no modification. In other words, acceptance of ETS in its entirety may prove to be a revenue windfall to U.S. airlines and, in turn, American

interests. As mentioned earlier, the MIT study modeling current market behavior forecasted windfall profits of as much as \$2.6 billion for U.S. airlines due to the value of free carbon allowances.⁵⁸ It may well be in the U.S. economic interests to comply with the EU ETS in its current form.

Clear Skies or Turbulence?

Directive 2008/101/EC is a contentious regulation. Intended to serve as a forcing function to impel the international community to address aircraft emissions, this legislation has instead raised the ire of policymakers across the globe. If allowed to escalate, the disagreement will weaken our alliance with a strong international partner and affect our national interests. A solution to this issue is possible through multilateral negotiations led by ICAO. The agreement will necessitate compromise and deference to the views of each stakeholder in order to achieve enduring success.

The United States and the EU have enjoyed a long history of diplomatic, economic, and military cooperation. Brussels was among Washington's most ardent supporters after the attacks of September 11, 2001; many EU member states provided military and diplomatic support for the ensuing war in Afghanistan. Several of the EU's member states also went to great lengths to modify their airport security measures at the behest of the Washington, providing separate screening facilities for passengers enroute to America.⁵⁹ This cooperative spirit of international partnership forms the foundation for a compromise to this volatile disagreement. Ultimately, a negotiated settlement will strengthen our partnership with the EU and contribute to the economic, diplomatic, and security interests of the United States.

Endnotes

¹ The European Union Home Page, “Tackling Climate Change,” http://europa.eu/legislation_summaries/environment/tackling_climate_change/index_en.htm (accessed January 1, 2012).

² The greenhouse gasses defined in the Kyoto Protocol are carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), and the industrial gasses of hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride. The aviation application of ETS is concerned mainly with CO₂.

³ The United Nations Framework Convention on Climate Change Home Page, *Kyoto Protocol to the United Nations Framework Convention on Climate Change*, http://unfccc.int/kyoto_protocol/items/2830.php (accessed January 1, 2012).

⁴ Ibid., arts. 6, 12, and 17, 1998. The Clean Development Mechanism (CDM), allows a country with an emission-reduction or emission-limitation commitment under the Kyoto Protocol to implement an emission-reduction project in developing countries. Such projects can earn saleable certified emission reduction (CER) credits, each equivalent to one ton of CO₂, which can be counted towards meeting Kyoto targets. The joint implementation mechanism allows a country to earn emission reduction units (ERUs) from an emission-reduction or emission removal project in another Kyoto Protocol abiding country, each equivalent to one ton of CO₂, which can be counted towards meeting its Kyoto target. For more information on these mechanisms see The United Nations Framework Convention on Climate Change Home Page, “Kyoto Protocol,” http://unfccc.int/kyoto_protocol/items/2830.php (accessed January 1, 2012).

⁵ The United Nations Framework Convention on Climate Change, *Kyoto Protocol to the United Nations Framework Convention on Climate Change*, 1998, art. 17, p. 15, <http://unfccc.int/resource/docs/convkp/kpeng.pdf> (accessed January 1, 2012).

⁶ *The Clean Air Act Amendments of 1990*, Public Law 549, 101st Cong., (November 15, 1990), 331, quoted in Larry Parker, *Climate Change and the EU Emissions Trading Scheme (ETS): Looking to 2020* (Washington, DC: Congressional Research Service, September 2010), 1.

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⁹ Ben Jones et al., “Climate Change, Economic Impact and Policy Responses,” *World Economic and Financial Surveys, World Economic Outlook, Globalization and Inequality*, October 2007, <http://www.imf.org/external/pubs/ft/weo/2007/02/pdf/c1.pdf> (accessed January 2, 2012).

¹⁰ Larry Parker, *Climate Change and the EU Emissions Trading Scheme (ETS): Looking to 2020* (Washington, DC: Congressional Research Service, September 2010), 1.

¹¹ Directive 2008/101/EC of the European Parliament and of the Council of the European Commission, The Official Journal of the European Union, 2009, L8/5, <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:008:0003:0003:EN:PDF> (accessed December 29, 2011).

¹² Ibid., L8/3, Annex I.

¹³ One credit is equivalent to one metric ton of CO₂ emissions.

¹⁴ U.S. Congress, House of Representatives, *Report on the European Union Emissions Trading Scheme Act of 2011*, H.R. 2594, 112th Cong., 1st sess. (October 5, 2011), 3.

¹⁵ Directive 2008/101/EC, L8/11.

¹⁶ U.S. Government Accountability Office, *Aviation and Climate Change: Report to Congressional Committees* (Washington, DC: U.S. Government Accountability Office, June 2009), 54-55.

¹⁷ Directive 2008/101/EC, L8/13.

¹⁸ U.S. Congress, House of Representatives, The House Transportation and Infrastructure Committee, Aviation Subcommittee, *The European Union's Emissions Trading Scheme: A Violation of International Law: Hearings before the Aviation Subcommittee of The House Transportation and Infrastructure Committee*, 112th Cong., 1st sess., July 27, 2011, in Proquest Congressional (accessed December 30, 2011).

¹⁹ Robert Malina, et al., "The Impact of the European Union Emissions Trading Scheme on US Aviation," *Journal of Air Transport Management* 19, (2012): 40.

²⁰ U.S. Government Accountability Office, *Aviation and Climate Change*, 11.

²¹ The European Union Homepage, "Road charging: Heavy lorries to pay for costs of air and noise pollution," <http://europa.eu/rapid/pressReleasesAction.do?reference=MEMO/11/378&format=HTML&aged=0&language=EN&guiLanguage=en> (accessed January 27, 2012).

²² Directive 2008/101/EC, L8/8.

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²⁴ Ibid., 5.

²⁵ U.S. Congress, *The European Union's Emissions Trading Scheme*.

²⁶ Convention on International Civil Aviation, December 7, 1944, Ninth ed., 61 Stat. 1180, 15 U.N.T.S. 295.

²⁷ *The International Civil Aviation Organization Home Page*, <http://www.icao.int/Pages/member-states.aspx> (accessed January 14, 2012).

²⁸ The twenty-one nations were Argentina, Brazil, Chile, China, Colombia, Cuba, Egypt, India, Japan, South Korea, Malaysia, Mexico, Nigeria, Paraguay, Qatar, Russian Federation, Saudi Arabia, Singapore, South Africa, the U.S., and the United Arab Emirates.

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³⁰ Court of Justice of the European Union, *Judgement of the Court in Case C-366/10, Air Transportation Association of America et.al. v. Secretary of State for Energy and Climate Change*, December 21, 2011, I-26 (71), <http://monckton.com/docs/general/C-366-10ATAEU.pdf> (accessed January 3, 2012).

³¹ *Ibid.*, I-42-43.

³² Directive 2008/101/EC, L8/9.

³³ U.S. Congress, *The European Union's Emissions Trading Scheme*.

³⁴ Directive 2008/101/EC, L8/9.

³⁵ Interview with anonymous EU officials, December 23, 2011. The sources have requested that I do not reveal their identity as they are not authorized to speak for the EU. The first instance the EU mandated the use of revenue was for tolls collected as a result of its Eurovignette Directive.

³⁶ U.S. House of Representatives, *Report on the European Union Emissions Trading Scheme Act of 2011*, 3.

³⁷ Kevin W. Welsh, Senior International Advisor for Environment and Energy, Department of Policy, International Affairs and Environment for the Federal Aviation Administration, interview by author, Washington, DC, December 23, 2011.

³⁸ U.S. Congress, House of Representatives, *European Union Emissions Trading Scheme Prohibition Act of 2011*, H.R. 2594, 112th Cong., 1st sess. (October 24, 2011), 3-4 <http://www.gpo.gov/fdsys/pkg/BILLS-112hr2594eh/pdf/BILLS-112hr2594eh.pdf> (accessed January 14, 2012).

³⁹ EU Official, interview by author.

⁴⁰ *Ibid.* Although an EU official, this source had a clear understanding of the pending Senate bill. A member of Senator Thune's office confirmed this language.

⁴¹ Adrian Arnakis, Legislative Counsel to Senator John Thune, telephone interview by author, January 5, 2012.

⁴² Christopher Bodeen, Alex Kennedy and Zhao Liang, "China Urges Europe to Heed Objections to Airline Carbon Charge, Hold Talks with Opponents," *The Washington Post*,

January 5, 2012, http://www.washingtonpost.com/business/china-calls-on-europe-to-heed-objections-to-airline-carbon-charge-hold-talks-with-opponents/2012/01/05/gIQAUPX5bP_story.html (accessed January 5, 2012).

⁴³ EU officials view the chances of this outcome as slim, as Chinese leaders would not want to subject the state to a Boeing monopoly for large aircraft orders.

⁴⁴ Bodeen, "China Urges Europe to Heed Objections."

⁴⁵ Dick K. Nanto, *Economics and National Security: Issues and Implications for U.S. Policy* (Washington, DC: Congressional Research Service, January 4, 2011), 1.

⁴⁶ Directive 2008/101/EC, L8/13.

⁴⁷ Ibid., L8/5.

⁴⁸ Carl Burleson, Deputy Assistant Administrator for Policy, International Affairs and Environment for the Federal Aviation Administration, interview by author, Washington, DC, December 23, 2011.

⁴⁹ John M. Broder, "House Passes Bill to Address Threat of Climate Change," *The New York Times*, June 26, 2009, (http://www.nytimes.com/2009/06/27/us/politics/27climate.html?_r=1&hp (accessed January 16, 2012.))

⁵⁰ Govtrack.us homepage, "H.R. 2454: American Clean Energy and Security Act of 2009," <http://www.govtrack.us/congress/bill.xpd?bill=h111-2454> (accessed January 16, 2012.)

⁵¹ Winglets are extensions added to the ends of an aircraft wings. They disrupt the wingtip vortices created during the production of lift, which results in less drag on the aircraft and lower fuel consumption.

⁵² GAO, *Aviation and Climate Change*, 20.

⁵³ Federal Aviation Administration Homepage, "Why NextGen Matters," http://www.faa.gov/nextgen/why_nextgen_matters/what/ (accessed January 16, 2012.) Satellite based navigation allows an aircraft to fly shorter, more direct distances because the aircraft do not have to fly over fixed, land-based navigation facilities enroute to their destination. Continuous descent approaches allow an aircraft to descend from its cruising altitude or transition altitude continuously to the airport with minimal leveling off. This results in less fuel burned.

⁵⁴ Directive 2008/101/EC, L8/9.

⁵⁵ The United Nations Framework Convention on Climate Change, *Kyoto Protocol*, art. 2, 2.

⁵⁶ EU Officials, interview by author.

⁵⁷ Raymond J. Ahearn, *Trade Conflict and the U.S.-European Union Economic Relationship* (Washington, DC: Congressional Research Service, April 11, 2007), 20.

⁵⁸ Malina, “The Impact of the European Union Emissions Trading Scheme,” 40.

⁵⁹ EU Officials, interview by author.

