

**Department of Transportation
Federal Aviation Administration**

SUPPORTING STATEMENT

Emissions Monitoring and Reporting for Annex 16 Vol. IV of the Chicago Convention

INTRODUCTION

This information collection is submitted to the Office of Management and Budget (OMB) to request a three-year approval clearance for the information collection entitled, Emissions Monitoring and Reporting for Annex 16 Vol. IV of the Chicago Convention, (OMB Control No. 21XX-XXXX).

Part A. Justification

1. Circumstances that make collection of information necessary. Explain the circumstances that make the collection of information necessary. Identify any legal or administrative requirements that necessitate the collection. Attach a copy of the appropriate section of each statute and regulation mandating or authorizing the collection of information.

On June 27, 2018 the United States (through its International Civil Aviation Organization [ICAO] Council Member) voted to adopt Annex 16, Vol. IV of the Chicago Convention. Annex 16, Vol. IV contains the Standards and Recommended Practices (SARPs) relating to the implementation of the Carbon Offsetting and Reduction Scheme for International Aviation (CORSA). Annex 16, Vol. IV is a direct result of implementation of the “European Union Emissions Trading Scheme Prohibition Act of 2011” (PL 112-200), which includes a provision instructing the Secretary of Transportation and the FAA Administrator to use their authority to conduct international negotiations to pursue a worldwide approach to aircraft emissions. Additionally, FAA is instructed by 49 USC § 40105(b)(A) to act consistently with the obligations of the United States Government under an international agreement. Annex 16, Vol. IV implements a single market-based measure for international aviation emissions and ensures a fair playing field for all operators. It also avoids a patchwork of country- or regionally-based regulatory measures that are inconsistently applied, bureaucratically costly, and economically damaging. To implement Annex 16, Vol. IV, U.S. aircraft operators are required to file an Emissions Monitoring Plan (EMP) if they emit more than 10,000 tonnes of emissions on international flights with fixed wing aircraft that have a maximum takeoff mass (MTOM) of greater than 5,700 kg. Flights for Heads of State, military, customs and police, and humanitarian, firefighting, and medical purposes are fully excluded. U.S. operators that have filed an EMP are also required to file an annual Emissions Report (ER). Together, an operator’s EMP and annual ERs allow an operator and the FAA to fulfill the emissions monitoring, reporting, and verification (MRV) requirements of Annex 16 Vol. IV. Pursuant to ICAO processes and procedures, ICAO Member States had until 22 October 2018 to register disapproval in whole or

in part with Annex 16, Vol. IV.¹ In addition, Member States had until 18 December 2019 to file differences with Annex 16, Vol. IV.² Given the possibility for disapproval or significant filing of differences, the FAA is only now taking this action.

Attachments:

- European Union Emissions Trading Scheme Prohibition Act of 2011 (PL 112-200)
- 49 USC § 40105 (b)(A)

Annex 16, Volume IV – Carbon Offsetting and Reduction Scheme for International Aviation (CORSA) of the Convention on Civil Aviation (hereinafter the “Chicago Convention”).

2. How, by whom, and for what purpose is the information used. *Indicate how, by whom, and for what purpose the information is to be used. Except for a new collection, indicate the actual use the agency has made of the information received from the current collection.*

Operators that are subject to the applicability of Annex 16 Vol. IV. (i.e., they emit more than 10,000 tonnes of emissions on international flights with fixed wing aircraft that have a maximum takeoff mass (MTOM) of greater than 5,700 kg) and choose to participate in the FAA program will submit their EMPs and ERs electronically. Both documents use Microsoft Excel-based templates and can be transmitted via email or uploaded to a web portal. EMPs that are submitted by operators will be used as a collaborative tool between the operator and FAA to document a given operator’s chosen fuel use monitoring procedures. FAA will retain a copy of the EMP and will share with ICAO a list of operators that are obligated to submit EMPs. This will demonstrate U.S. implementation of Annex 16 Vol. IV. FAA will not submit any specific EMPs from U.S. operators to ICAO. Annual ERs that are submitted to FAA by operators and verifiers will be used to document each operators’ international emissions. FAA will use the ERs to calculate aggregated emissions data for all U.S. operators at the airport-pair level. FAA will submit the aggregated country-pair emissions data to ICAO to demonstrate U.S. implementation of Annex 16 Vol. IV.

3. Extent of automated information collection. *Describe whether, and to what extent, the collection of information involves the use of automated, electronic, mechanical, or other technological collection techniques or other forms of information technology, e.g. permitting electronic submission of responses, and the basis for the decision for adopting this means of collection. Also describe any consideration of using information technology to reduce burden.*

¹ Pursuant to Article 90 of the *International Civil Aviation Organization (ICAO), Convention on Civil Aviation (Chicago Convention)*, “The adoption by the Council of the Annexes ... shall then be submitted by the Council to each contracting State. Any such Annex or any amendment of an Annex shall become effective within three months after its submission to the contracting States or at the end of such longer period of time as the Council may prescribe, unless in the meantime a majority of the contracting States register their disapproval with the Council.”

² Pursuant to Article 38 of the *Chicago Convention*, “Any State which finds it impracticable to comply in all respects with any such international standard or procedure ... or which deems it necessary to adopt regulations or practices differing in any particular respect from those established by an international standard, shall give immediate notification ... of the differences between its own practice and that established by the international standard. In the case of amendments to international standards, any State which does not make the appropriate amendments to its own regulations or practices shall give notice to the Council within sixty days of the adoption of the amendment to the international standard, or indicate the action which it proposes to take. In any such case, the Council shall make immediate notification to all other states of the difference which exists between one or more features of an international standard and the corresponding national practice of that State.

Both EMP and ER templates use Microsoft Excel-based templates, which maximizes convenience for operators given the application’s widespread use and ease of data entry. FAA will allow operators to submit their completed EMPs and ERs electronically via either email or an FAA-developed secure submission portal, depending on each operator’s preference.

4. Efforts to identify duplication. Describe efforts to identify duplication. Show specifically why any similar information already available cannot be used or modified for use for the purposes described in item 2 above.

Information currently submitted to and collected by FAA or DOT (e.g., BTS Form 41 fuel burn data) does not provide the necessary level of fidelity on emissions and fuel data to enable the United States to meet its obligations under Annex 16, Vol. IV.

5. Efforts to minimize the burden on small businesses. If the collection of information impacts small businesses or other small entities (item 5 of OMB form 83-I), describe any methods used to minimize burden.

This collection will not involve small businesses or small entities.

Note: As described in 1., there are no filing requirements for small U.S. aircraft operators since only operators who emit more than 10,000 tonnes of emissions on international flights are required to file an EMP and annual ERs.

6. Impact of less frequent collection of information. Describe the consequence to Federal program or policy activities if the collection is not conducted or is conducted less frequently, as well as any technical or legal obstacles to reducing burden.

Annex 16 Vol. IV requires operators submit a single EMP to document its monitoring plans (i.e., the first step of the MRV process), and must only submit an updated EMP if there are substantive changes to their operations. Annex 16 Vol. IV also requires operators to submit an ER annually to report its emissions and have them verified (i.e., the subsequent steps of the MRV process). If an operator does not submit an EMP, nor its annual ERs, the United States will not be in compliance with Annex 16 Vol. IV.

7. Special circumstances. Explain any special circumstances that would cause an information collection to be conducted in a manner:

Annex 16 Vol. IV requires operators to keep records relevant to demonstrating their compliance for a period of 10 years, which is considered a “special circumstance” in the list below. This information collection results in no other “special circumstances.”

- **Requiring respondents to report information to the agency more often than quarterly;**
 - **None**
- **Requiring respondents to prepare a written response to a collection of information in fewer than 30 days after receipt of it;**

- *None*
- *Requiring respondents to submit more than an original and two copies of any document;*
 - *None*
- *Requiring respondents to retain records, other than health, medical, government contract, grant-in-aid, or tax records for more than three years;*
 - *Annex 16 Vol. IV requires operators to keep records relevant to demonstrating their compliance for a period of 10 years.*
- *In connection with a statistical survey, that is not designed to produce valid and reliable results that can be generalized to the universe of study;*
 - *None*
- *Requiring the use of a statistical data classification that has not been reviewed and approved by OMB;*
 - *None*
- *That includes a pledge of confidentiality that is not supported by authority established in statute or regulation, that is not supported by disclosure and data security policies that are consistent with the pledge, or which unnecessarily impedes sharing of data with other agencies for compatible confidential use; or*
 - *None*
- *Requiring respondents to submit proprietary trade secret, or other confidential information unless the agency can demonstrate that it has instituted procedures to protect the information's confidentiality to the extent permitted by law.*
 - *None*

8. Compliance with 5 CFR 1320.8: *Provide an electronic copy and identify the date, volume number and page number of the publication in the Federal Register of the agency's notice (for a 60-day and a 30-day notice), required by 5 CFR 1320.8(d), soliciting comments on the information collection prior to submission to OMB.*

- *Summarize public comments received in response to that notice and describe actions taken by the agency in response to those comments. Specifically address comments received on cost and hour burden.*
- *Describe efforts to consult with persons outside the agency to obtain their views on the availability of data, frequency of collection, the clarity of instructions and record keeping, disclosure, or reporting format (if any), and on the data elements to be recorded, disclosed, or reported.*
- *Consultation with representatives of those from whom information is to be obtained or*

those who must compile records should occur at least once every 3 years--even if the collection of information activity is the same as in prior periods. There may be circumstances that may preclude consultation in a specific situation. These circumstances should be explained.

The Federal Register Notice with a 60-day comment period soliciting comments on the following collection of information was published on April 30, 2019 (84 FR 18334). FAA received two comments in response to this notice. In response to those comments, FAA revised the burden estimates in line with the input received.

9. Payments or gifts to respondents. ***Explain any decision to provide a payment or gift to respondents, other than enumeration of contractors or grantees.***

N/A. The FAA will not be providing any payments or gifts to respondents.

10. Assurance of confidentiality: ***Describe any assurance of confidentiality provided to respondents and the basis for the assurance in statute, regulation, or agency policy.***

No assurance of confidentiality to respondents.

11. Justification for collection of sensitive information: ***Provide additional justification for any questions of a sensitive nature, such as sexual behavior and attitudes, religious beliefs, and other matters that are commonly considered private. This justification should include the reasons why the agency considers the questions necessary, the specific uses to be made of the information, the explanation to be given to persons from whom the information is requested, and any steps to be taken to obtain their consent.***

This collection does not contain any questions of a sensitive nature.

12. Estimate of burden hours for information requested: ***Provide estimates of the hour burden of the collection of information. The statement should:***

- ***Indicate the number of respondents, frequency of responses, calculation for the individual burdens and for the total annual hour burden, and an explanation of how the burden was estimated. Unless directed to do so, agencies should not conduct special surveys to obtain information on which to base hour burden estimates. Consultation with a sample (fewer than 10) of potential respondents is desirable. If the hour burden on respondents is expected to vary widely because of differences in activity, size, or complexity, show the range of estimated hour burden, and explain the reasons for the variance. Generally, estimates should not include burden hour for customary and usual business practices***
- ***If this request for approval covers more than one form, provide separate hour burden estimates for each form and aggregate the hour burdens in item 13 of OMB form 83-I.***
- ***Provide estimates of annualized cost to respondents for the hourly burdens for collections of information, identifying and using appropriate wage rate categories. The cost of contracting out or paying outside parties for information collection activities***

should not be included here. Instead, this cost should be included in item 14.

Overall, this collection is estimated to result in the following for EMPs:

- ***EMP Number of respondents (total):*** From the outset, between 11 and 49 operators are expected to submit an EMP. Based on assessment of the operators' likelihood of being subject to CORSIA, it was estimated that approximately 49 are expected to be subject to CORSIA (i.e., 30 certain and 19 likely). From the outset, approximately 11 operators would trigger the voluntary reporting agreement (i.e., 95% international fuel use threshold for triggering the effectiveness of the agreement). Some additional operators could submit an EMP over time (as CORSIA moves from voluntary to mandated reporting).
- ***EMP submission frequency per respondent:***
 - ***Initial EMP submission:*** 1 per respondent
- ***EMP hour burden per year (total):*** It is expected that filling and submitting an EMP could on average take approximately 22.5 hours per operator. This assumes 47.5 hours for respondents using Fuel Use Monitoring Methods and 16 hours for respondents using simplified Monitoring Methods.
- ***EMP annualized cost (total):*** Based on hourly cost assumptions described in the section below: "*Explanation of how ER and EMP burdens,*" the total estimated cost for filling and submitting an EMP is approximately \$3560 per operator and per submission for respondents using Fuel Use Monitoring Methods and \$1200 per operator and per submission for respondents using simplified Monitoring Methods.

Overall, this collection is estimated to result in the following for ERs:

- ***ER Number of respondents (total):***
 - ***Number of respondents using Fuel Use Monitoring Methods:*** In the low and high scenarios, it is expected that approximately 10 operators using Fuel Use Monitoring Methods are expected to submit an ER from the outset (2019).
 - ***Number of respondents using simplified Monitoring Methods:*** In the low scenario, one operator would be eligible to use simplified Monitoring Methods and will submit an ER from the outset (2019). In the high scenario, approximately 39 operators eligible to use simplified Monitoring Methods could submit an ER.
- ***ER submission frequency per respondent:*** 1 per respondent for any given year (y).
- ***ER hour burden per year (total):***
 - ***ER hour burden per year for respondents using Fuel Use Monitoring Methods:*** Filling and reporting an Emissions Report would take on the order of 60 hours per operator and per year for operators using a Fuel Use Monitoring Method (i.e., monitoring fuel at individual flight level).

- **ER hour burden per year for respondents using simplified Monitoring Methods:** Filling and reporting an Emissions Report would take on the order of 17.5 hours per operator and per year for operators using a simplified Monitoring Methods (i.e., using the ICAO CORSIA CERT).
- **ER annualized cost (total):**
 - **ER annualized cost per submission per operator using Fuel Use Monitoring Methods:** For operators using a Fuel Use Monitoring Method (i.e., monitoring fuel at individual flight level), reporting cost could be on the order of \$4,500 per operator and per year.
 - **ER annualized cost per submission per operator using simplified Monitoring Methods:** For operators using a simplified Monitoring Methods (i.e., using the ICAO CORSIA CERT), reporting cost could be on the order of \$1,310 per operator and per year.

Summary (Annual numbers)	Reporting	Recordkeeping
IC 1) Emission Monitoring Plan (EMP)		
Note: 49 respondents are expected to submit 1 EMP each in a 10 year window. These values are annualized below.		
# of Respondents	5	5
# of Responses per respondent	1	1
Time per Response (hours)	21.5	1
IC 2) Emission Report (ER)		
Note: 49 respondents are expected to submit 1 ER each, annually.		
# of Respondents	49	49
# of Responses per respondent	1	1
Time per Response (hours)	25.2	1
All ICs		
Total # of responses	54	54
Total burden (hours)	1,397	54

Explanation of how ER and EMP burdens were estimated:

The number of respondents was assessed using a global aircraft registration database (ASCEND, 2015) to identify the potential number of U.S. aircraft operators subject to Annex 16, Vol. IV (i.e., with annual emissions on international flights greater than 10,000 tonnes). For this estimate, operators' annual emissions were assumed to grow at the average rate of the international aviation industry resulting in several new entrant operators (i.e., for which emissions grow above the 10,000 tonne threshold in a given year). Operators were also categorized as “*Operator using a Fuel Use Monitoring Method*” and “*Operator using a Simplified Monitoring method (i.e., ICAO CORSIA CERT)*” depending on their level of emissions and in accordance with Annex 16 Volume IV requirements. Note: Operators eligible to use simplified monitoring procedures are expected to experience lower cost to generate their Emissions Report.

The hourly rates for the preparation and submission of an Emissions Monitoring Plan are based on a mix of wage rates that include; a 50% burden on General and Operations Managers (11-1021) with hourly rate of \$59.35 and 50 % burden on a Management Analysts (13-1110) with hourly rate of \$44.92. The fully loaded rate of \$74.96 was calculated using a multiplier of 1.44 based on the United States average of wage and salaries and benefits for Private industry workers [U.S. BLS 2018].

13. Estimate of total annual costs to respondents. ***Provide an estimate of the total annual cost burden to respondents or recordkeepers resulting from the collection of information. (Do not include the costs of any hour burden shown in items 12 and 14).***

- ***Include a breakdown for total capital/start-up costs and operation/maintenance. The cost estimates should be split into two components: (a) a total capital and start-up cost component (annualized over its expected useful life); and (b) a total operation and maintenance and purchase of services component. The estimates should take into account costs associated with generating, maintaining, and disclosing or providing the***

information. Include descriptions of methods used to estimate major costs factors including system and technology acquisition, expected useful life of capital equipment, the discount rate(s), and the time period over which costs will be incurred. Capital and start-up costs include, among other items, preparations for collecting information such as purchasing computers and software; monitoring, sampling, drilling and testing equipment; and record storage facilities.

- *If cost estimates are expected to vary widely, agencies should present ranges of cost burdens and explain the reasons for the variance. The cost of purchasing or contracting out information collection services should be a part of this cost burden estimate. In developing cost burden estimates, agencies may consult with a sample of respondents (fewer than 10), utilize the 60-day pre-OMB submission public comment process and use existing economic or regulatory impact analysis associated with the rulemaking containing the information collection, as appropriate.*

- *Generally, estimates should not include purchases of equipment or services, or portions thereof, made (1) prior to October 1, 1995, (2) to achieve regulatory compliance with requirements not associated with the information collection, (3) for reasons other than to provide information or keep records for the government, or (4) as part of customary and usual business or private practices.*

Overall, this collection is estimated to result in the following for EMPs:

- ***EMP total startup costs:*** The total cost to all U.S. operators of filling and submitting an EMP (once per operator) could range from \$36,800 and \$82,000.

Overall, this collection is estimated to result in the following for ERs:

- ***ER total capital/startup costs (annualized):*** Given that U.S. operators generally have sophisticated IT systems and fuel monitoring system already in place for other purposes (e.g., internal fuel management procedures or external reporting), it was assumed that the reporting requirements associated with Annex 16, Vol. IV should not require any new IT system/infrastructure to operators.

- ***ER total operation and maintenance and purchase of services:***
 - ***Low:*** Under the low scenario, the total reporting cost to all U.S. operators combined could be on the order of \$46,300 per year.

 - ***High:*** Under the high scenario, the total reporting cost to all U.S. operators combined could be on the order of \$96,100 per year.

Explanation of how ER and EMP costs were estimated:

Annual unit cost of reporting to the FAA, were based on analyses of cost of MRV conducted by the ICAO Global Market Based Measure technical Task Force (GMTF), with the support from U.S. experts. Given that U.S. operators generally have sophisticated IT systems and fuel

monitoring system already in place for other purposes (e.g., internal fuel management procedures or external reporting), it was assumed that the reporting requirements associated with Annex 16, Vol. IV should not require any new IT system/infrastructure to operators. In addition, for operators eligible to use simplified procedures, the CERT tool required by Annex 16, Vol. IV is available free of charge and runs on commonly used laptops and/or desktop computers.

14. Estimate of cost to the Federal government. ***Provide estimates of annualized cost to the Federal government. Also, provide a description of the method used to estimate costs, which should include quantification of hours, operational expenses such as equipment, overhead, printing, and support staff, and any other expense that would not have been incurred without this collection of information. Agencies also may aggregate cost estimates from items 12, 13, and 14 in a single table.***

Estimated annualized cost to the Federal government: The total estimated cost to the Federal government related to the EMP and ERs are expected to be approximately \$380,000 per year.

Explanation of how annualized cost to the Federal government was estimated:

Estimates of costs to the Federal government include; cost of managing EMPs and ERs, cost of supporting reporting systems (contracted out) as well as the cost of reporting the list of operators and the aggregated emissions reports to ICAO.

The collection and review of the Emissions Monitoring Plan are assumed to take 20 hours per operator on the outset (2018-2019) with learning curve effects in the out years resulting in 12 hours per operator by the end of the reporting period.

The collection and review (i.e., order of magnitude check of the verified emissions report) is estimated to require 8 hours for operators that use a fuel use monitoring method and 5 hours for operators that use simplified monitoring procedures. These estimates reduce over time due to learning curve effects to 3 and 2 hours respectively by the end of the reporting period.

The reporting to ICAO is estimated to require; 10 hours per year for notifying ICAO of the decision to voluntarily participate, 160 hours per year for compiling the aggregated emissions report from States to ICAO, 10 hours per year to submit CO₂ emissions to ICAO and 2 hours for submitting the updated list of airplane operators and verifiers ICAO.

The hourly rate for the review of the Emissions Monitoring Plans and Emissions Reports as well as for reporting to ICAO are based on a mix of wage rates including 10% burden on GS-15 with hourly rate of \$57.09 and 90 % burden on a GS-13 with hourly rate of \$41.07.

15. Explanation of program changes or adjustments. ***Explain the reasons for any program changes or adjustments reported.***

This is a new collection; therefore, it is a program change.

16. Publication of results of data collection. ***For collections of information whose results will be published, outline plans for tabulation, and publication. Address any complex analytical***

techniques that will be used. Provide the time schedule for the entire project, including beginning and ending dates of the collection of information, completion of report, publication dates, and other actions.

The FAA does not plan to directly publish the results of this data collection. FAA will, however, share a list of operators that are obligated to submit EMPs with ICAO. FAA will also use the ERs to calculate aggregated emissions data for all U.S. operators at the airport-pair level and submit the aggregated country-pair emissions data to ICAO to demonstrate U.S. implementation of Annex 16 Vol. IV. FAA will not submit any individual operator's EMPs or ERs to ICAO.

17. Approval for not displaying the expiration date of OMB approval. If seeking approval to not display the expiration date for OMB approval of the information collection, explain the reasons that display would be inappropriate.

FAA is seeking approval not to display an expiration date for both the EMP and ER template. Annex 16 Vol. IV only requires an operator to file a single EMP at the start of the MRV process. If, however, an operator experiences substantive changes to its operations that impact the information contained in its EMP it is required to submit an updated EMP. Since the EMP template is not expected to change in future years, but operators may need to submit an updated EMP due to potential operational changes, FAA requests approval not to display an expiration date. Similarly, since Annex 16 Vol. IV requires an operator to submit an annual ER to FAA, and the ER template is not expected to change in future years, FAA requests approval not to display an expiration date.

18. Exceptions to certification statement. Explain each exception to the certification statement identified in question 19, "Certification for Paperwork Reduction Act Submissions" (attached).

There are no exceptions to the certification statement.